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HOSPITALS.

ONE of the causes which militate against architecture as an art is unquestionably the fact that in certain types of buildings we are still experimenting, and, as far as can be seen, must go on experimenting for years to come.

And this must necessarily divert attention from the problem of the architectural treatment of a type, for the attention of the designer is so occupied by considerations of the right type to be adopted that he is too much obsessed by the mental problem to give full and adequate consideration to the architectural one.

The two types of buildings to which this chiefly refers are hospitals and schools, especially the former. For, although other classes of buildings, such as libraries and municipal buildings, are now very differently planned and arranged than they were fifty years ago, the change has been more marked in the case of the modern hospital and school.

The hospital of a hundred years ago was more like the accommodation provided in connection with monasteries in the Middle Ages than the hospital of to-day, and we have no means of telling whether we have even now approached the ultimate solution of best type of structure for the use of the sick and infirm.

We are inclined to think that our authorities would be acting wisely in many cases if they erected good temporary buildings which would last for forty or fifty years instead of spending immense sums in erecting permanent buildings which may be rendered obsolete by discoveries in medical science.

Be this as it may, the subject is one of the greatest importance, not only to architects but to that general public the members of which are menaced from time to time by disease and possibly death, and to whom the problem of the extirpation of special diseases and the possibility of the prolongation of the span of life are subjects of unfailing interest.

Whatever life has brought us of good or evil, few of us can look forward with unmixed anticipation to

> "The undiscover'd country from whose bourne
> No traveller returns."

And it is to the doctor of to-day, as to the witch doctor of primitive times, that we look to prevent our too soon taking our individual voyages of discovery.

Apart from considerations which induce us to think that there may be sound reasons why a less permanent type of building would in hospital construction be a real economy, we are sure that the elaboration of the modern hospital is very often carried to unreasonable extent. The doctor often dictates to the architect, with the result that immense sums of money have been uselessly expended in experimental fads which in many cases have the same relative importance to the cure of disease that the colour of a railway carriage has to its practical value as rolling stock.

Statistics have shown that the average death rate in Irish asylums, which are often obsolete and ill-adapted for their purpose, is smaller than that in the better-equipped and more modern English institutions of like nature. And wonderful results as to cures effected in the case of patients treated in tents and other temporary makeshifts show us that too much importance may be laid on the benefits of perfectly-equipped buildings for the sick.

In saying this we are not, however, urging that architectural skill should not be brought to bear on medical problems, but are simply emphasising the fact that there are more mysteries to be solved in the right treatment of disease than we are perhaps aware of, and that the hospital problem is still in the crucible, and its ultimate form—that form which will give the opportunity for the exercise of the highest architectural expression—has not yet been arrived at.

The problem of the nature and conditions under which infection takes place is still to a large extent an open question. If it takes place through aerial means, as was thought to be the case, this fact will, as it has in the past, largely govern and control our hospital planning; but if, on the contrary, as is now held in many quarters, actual contact is a necessary condition, as has been partially demonstrated at the Pasteur Hospital in Paris, where different infectious diseases are treated in adjoining cubicles, our planning may take other and different lines.

We have gone through a stage in which it was considered necessary to disconnect not only water-closets but baths in connection with hospital wards by dividing them from those wards by disconnecting annexes, and are now coming round to the idea that this is unnecessary, and that bathrooms at least are better placed in immediate connection with the wards to which they belong.

And such points of detail, repeated as they are for every ward unit, make large changes in the construction and arrangement of each ward unit.

Another question which can be hardly said to be solved at present is the relative advantages of single-storied ward blocks as compared with buildings of two or more stories.

The advocates of the latter point out the greater economy in construction and cost and the smaller sites needed for buildings containing the same amount of accommodation. On the other hand, with the single-storied wards the ward units can be brought closer together, preserving the same angle for light and air, staircases and escape staircases are done away with, and convenience of administration and better ventilation are said to be made possible.

To a great extent, however, it may be said that the single-storied hospital, which was regarded as the best possible type, is now less in favour among experts than was formerly the case.

A further important matter in hospital design is connected with the scientific treatment of ventilation and heating.

In the ingeniously-planned Victoria Hospital at Belfast the wards are placed side by side and entirely lighted from the top and ventilated mechanically, thus constituting a new and radical attempt to solve the problem of hospital construction and arrangement—an experiment we must all watch with interest, as if such lines were followed in the future it would revolutionise the whole conditions of the problem.

But among the greatest of the problems to be solved in the next fifty years is the position which the various institutions for the treatment of disease in this country are likely to occupy. Will the great free hospitals, which have done so much for the inhabitants of our land, be swept away or merged in a system of State institutions? Will the Boards of Guardians continue in the future, as in the past, to manage and regulate the great infirmaries which largely supply the place of hospitals for the indigent poor? And will the management and control of asylums and institutions for the insane continue to be controlled by another authority? What will be the end of the problem of consumptive sanatoria which are to be established in connection with the Insurance Act? And will town and country authorities continue to make provision for another class of hospital—those for dealing with outbreaks of infectious diseases? These are a few of the many moot points which all affect architects and the public, and which are among the further reasons we have for saying that the whole subject of hospital

accommodation is in the melting-pot, and that the ultimate shape and form of its architectural solution is not yet in sight.

There are two minor problems which demand a solution in the near future—the one being the institution of private hospitals for paying patients, and the other the establishment of really efficient and well-managed nursing homes. It is true that the latter abound in our large cities, but the fees charged at private nursing homes are such as to frequently render them beyond the means of those who most need them—the large class of people who can afford to pay, but not extravagantly, and for whom suitable institutions are urgently needed. The provision of such accommodation, on a scale which would enable promoters to make it commercially profitable without penalising patients or their friends, is probably quite within the bounds of reason.

Organisation and method can do much, as is shown by the system common to the Continent of Europe, by which people can obtain the best medical and surgical attention at rates which are an inconsiderable fraction of the fees paid in this country for specialists' advice, and that without inflicting any hardship on the followers of Æsculapius, to whom we in this country, in common with all mankind, owe so great a debt of gratitude.

NOTES.

Admiralty Arch.

THE offer made by the Phœnix Assurance Company to sell to the joint authority, on reasonable terms, such portions of their land as would be required to complete a suitable scheme for the Admiralty Arch brings this long-drawn-out question a step nearer completion. We gather that the various authorities concerned have now virtually agreed upon the draft of the Bill to be presented to Parliament, and that, generally speaking, all those preliminaries are now settled upon which the architectural possibilities of the scheme must largely depend. We are not aware what arrangements, if any, have been made as to obtaining the design itself, but we are confident they will not be made without due regard to the general opinion of the profession. We shall await the decision with much interest.

St. Mary-le-Strand.

THE two-hundredth anniversary of the laying of the foundation-stone of St. Mary-le-Strand was solemnised last Sunday by special services, at one of which the Bishop of London officiated. February 25, 1714, saw the commencement and September 7, 1717, the completion of a work which testifies to the skill of the architect, James Gibbs, in dealing with a sudden change of programme while the work was proceeding, caused by the abandonment of the original idea of erecting a colossal column to commemorate Queen Anne, and the determination to erect a tower instead over a vestibule originally intended only to carry a bell turret. The manner in which the difficulty has been got over by carrying up the original oblong shape of the vestibule and gradually resolving it into a square is most skilful and the result most happy. Though we naturally regret the loss of Gibbs's original intention—of which, so far as we are aware, there is, unfortunately, no record—this graceful spire is ample compensation.

Sir James Thornhill's House.

IT is gratifying to note that the old house in Dean-street, Soho, once occupied and decorated by Sir James Thornhill, has at the last moment been saved from destruction by the timely intervention of H.M. Commissioners of Works, acting under the powers conferred upon them by the Ancient Monuments Act. This house is a very good and complete example of the art of its period, and it is well worth preservation, quite apart from the staircase decoration by Thornhill. Indeed we are inclined to think that these paintings, interesting as they are, are the least of its claims to preservation, though their presence no doubt contributed largely to that end. The house having lately been put into a state of thorough repair, there should be no need of anything in the nature of an extensive restoration. We hope that a use will be found for it that has some definite reference to the past and present life of Soho, in which district there are still remaining other old houses of this period which may well claim the protection of the Ancient Monuments Act.

Tutorial Classes for Working People.

WE have much pleasure in calling attention to the Report of the University of London Joint-Committee for the Promotion of the Higher Education of Working People for the four years 1909-13, from which can be seen the remarkable progress of the tutorial class movement, which was the direct result of representations made to the University some four or five years ago by the Workers' Educational Association. The classes are limited to thirty members, each of whom undertake to attend the whole of the three years' course. Each class meets once a week and lasts for two hours. The subjects of study include history, literature, economics, sociology, political science, and biology. There are thirty classes in London alone, with over 670 students drawn from all the representative London trades; but we regret to see that of this number there are only forty representing the various building trades. We think the opportunity afforded by the thoroughly democratic constitution of these classes to meet men of University education and culture and to discuss with them matters of common interest on equal terms is only to be realised to be immediately seized upon by the workers in the building trades. Whatever may have been the case in the earlier days of our present method of conducting building operations, there is no doubt that the latest tendencies are all in favour of an intelligent co-operation between architect, builder, and craftsman. To obtain the full benefits of this co-operation the workman should have sufficient general education and breadth of outlook to enable him to grasp the general intention of the design and to realise the meaning of the various details and their relation to the whole. Not only would this give him greater interest in his work, but it would result in better buildings and finer architecture. Classes which tend in this direction are worthy of support, and we regret to learn that their further extension is crippled by lack of funds.

Cradley Heath Subsidences.

THE subsidences caused by mining operations which are said to have wrecked some fifty houses in the High-street of Cradley Heath, and to have dislocated gas and water mains and electric light gables, forcibly reminds us of the futility of our usual building methods and systems of drainage in such districts as this. We have no special knowledge of the methods of construction in use at Cradley Heath, but, judging from published descriptions of the effect of the subsidence, we gather that they are similar to those in general use elsewhere. Common sense would suggest that in all districts liable to disturbance from mining, earthquake, or other causes special systems of construction would be adopted, as is the case, for instance, in Japan. Something in the nature of a framed building that would subside or tilt over without collapsing or disintegrating appears to be called for. It would be interesting to know whether such buildings are allowed by the by-laws in force at Cradley Heath, and in the mining districts generally, or how far such by-laws have been modified to suit the special circumstances of the case. If wooden-frame buildings are out of the question, there are endless possibilities in the latest developments of steel and concrete construction. But it seems to us that a town where such subsidences occur, and where underground workings come to within 15 ft. of the surface of the main street, is not fit for permanent buildings or for permanent human habitation.

The Cottage Question.

A RECENT meeting of the Land and House League, presided over by Lord Saye and Sele, discussed the question as to whether local authorities should be entrusted with the erection of cottages under a State scheme, or whether the work should be carried out directly by a central State authority, and could come to no decision. Where a non-party gathering of practical politicians could not agree on the best administrative methods to employ, it is not for us to venture an opinion. But it is our province to insist that the method adopted should be such as is most likely to produce the best buildings. From this point of view there are advantages and disadvantages in either method. If a central authority may be expected to obtain a more elevated and therefore wider view of the whole question, a local authority may be expected to show more personal interest and to have a better appreciation of local conditions, and it certainly would not be in a position to enforce a standard design over the whole country irrespective of these conditions, of which there still seems to be some danger. But neither method is likely to prove a success unless due regard is paid to other than economic considerations. It is generally admitted that the beauty of the countryside is a national asset the destruction of which would go far to neutralise the advantages of better housing. Unless architectural skill is employed in the erection of these cottages that destruction appears inevitable. As we have pointed out before, the simple, economical, but artistic cottage is a problem which has lately received special attention from architects all over the country whose services should be secured. Even if it is not found possible to commission them in the ordinary way, their advice on such points as the selection of sites, the general character of the designs, and the choice of materials would be invaluable. Unusual circumstances may call for unusual arrangements, but there is the need for architectural skill, and there is the skill available. It is for those who are dealing with this question to find the best way of employing it.

HOSPITALS.

KING EDWARD VII. WELSH NATIONAL SANATORIUM.

On Tuesday, February 10, Mr. David Davies, M.P., who was supported by Sir Henry Tanner, F.R.I.B.A., presided over a meeting of the Royal Sanitary Institute at Buckingham Palace-road, when Mr. E. T. Hall, F.R.I.B.A., dealt with the planning of the proposed Welsh National Sanatorium at Pont-y-Wal.

The Chairman reviewed the steps taken in Wales to found a memorial to the late King Edward VII., which resulted in the establishment of a National Committee, who decided that a fitting tribute to his late Majesty would be the formation of an organisation to cope with the ravages of consumption. The Committee are taking steps to erect at least twelve hospitals and also two sanatoria, one for the north of Wales and one for the south, and it was the latter institution that Mr. Hall has designed.

Mr. E. T. Hall proceeded to describe the details of the scheme, which was, he said, the largest and one of the first, if not the first, sanatorium erected under the National Insurance Act. The site purchased is an ideal estate of about 375 acres, sloping generally to the south, but undulating and well wooded, and commanding most beautiful views of the Black Mountains and other ranges of the Brecon district. It provides a total of 304 beds for patients, divided as follows:—Male ambulant patients, 125; female ambulant patients, seventy-five; children, forty-eight; children in isolation, six; males and females requiring special nursing, fifty; which, with a staff of seventy-three, brings up the total to be housed to nearly 400.

It has been designed on strictest lines of rigid economy, consistent with thorough efficiency and smooth working. In other words, the accommodation is in every respect ample, but the buildings, while of fire-resisting construction throughout, are of the simplest elements. Thus the pavilions are of ferro-concrete, with 3-in. external walls. Plastering and glazed brickwork are omitted generally.

The site selected for the sanatorium itself is on a southern slope, with a steep fall, but roughly level from east to west. The buildings are built on this east to west axis, and rise above one another at about 100 ft. intervals, so that the patients in each pavilion look over the pavilions of their southern neighbours.

Thus they get the ideal southern aspect and the beautiful prospect of the distant mountains. The sexes are separated by the administration buildings forming a central bar from east to west, neither sex having any necessity to pass this bar. The nurses' home is south of all, so that when off duty they are away from their "shop." The drainage will be by a duplicated system, one main pipe for soil and another for rain-water. The soil will be carried to an outfall tank and treated, the effluent being taken to the stream on the estate. Rain-water will be stored for use in the boilers.

Water will be supplied from Talgarth, and this will have to be taken to Pont-y-Wal House reservoir. There will be no storage tank in any building except for the steam boilers.

The lighting throughout and the power for driving all machinery will be by electricity generated in the power-house. There will be steam boilers in duplicate, each capable of doing the whole load. There will be two dynamos, each again capable of doing the whole work.

It is proposed to heat, with steam-pipes and radiators, the nursing block, the children's pavilions, the patients' dining and writing halls, the staff dining-rooms, and the corridors of men's quarters. The drying, boot, clothes, and linen rooms of all pavilions will be heated off the hot-water services as the heat in these is required all the year round. There will be no heat in the ambulant wards or workshops. The duty-rooms of pavilions, the offices and all domestic rooms of female staff, the stewards' quarters and the lodge will have fireplaces.

The hot water will be raised in calorifiers next the boiler-house, and thence circulated through the various buildings by means of pumps in the calorifier house. By this means water at a high temperature will be obtained at every draw-off valve at sinks, lavatories, and baths. The calorifiers are in duplicate.

There were also provided sterilising plant for clothes and sputum, a laboratory, post-mortem-room, mortuary, boot-repairing-room, workshops, etc., and large stores of all sorts to provide against impassable roads, strikes, etc.

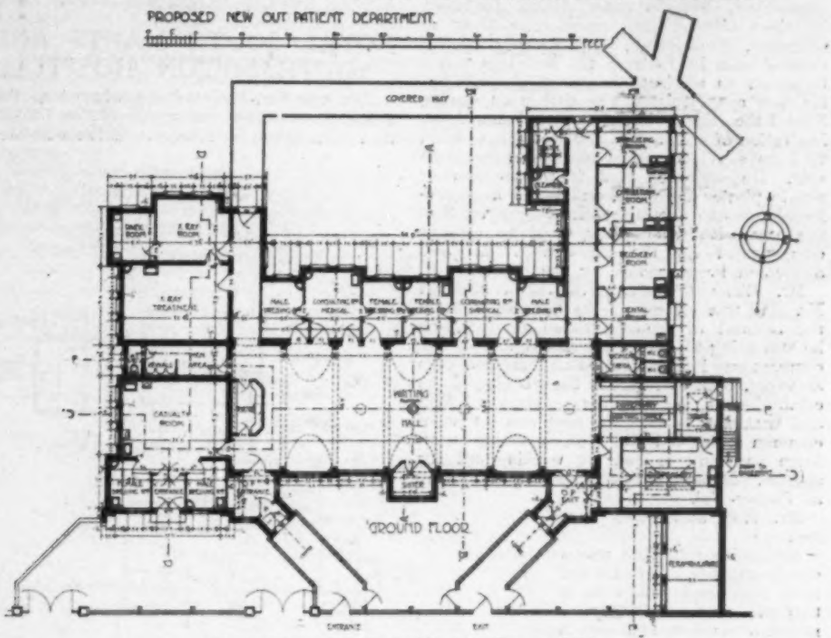
Coming to the question of cost, Mr. Hall said that the Departmental Committee in Clause 4 of the introduction to their report recommend "grants up to three-fifths of the cost per bed (which is estimated at not exceeding £150) should be made for the provision of additional sanatorium and hospital beds for adults, provided that the total sum should not exceed £90 per bed." This had been interpreted to include land (following a clause in the interim report of the Committee) and furniture. This was far too inelastic. He did not say that sanatoria of thirty to sixty beds must not be built for the money if the land was limited in area, and if plain slab concrete sheds with the minimum administrative buildings, earth closets, no machinery, boilers or plant, no electric lighting, etc., etc., but each sanatorium, must be judged on its merits. He felt sure that no large sanatorium, designed to comply with the requirements of the Memorandum of the Departmental Sub-Committee could be erected at the above-given cost laid down by the report as interpreted. One heard it said that a sanatorium had been erected somewhere for £60 a bed, but on investigation it would always be found that this meant a shed of a few beds with a bathroom and water-closet. Again, one constantly heard it said that at Beneden the sanatorium cost £100 a bed. Now that institution had 105 beds (with a few more in a tent). Of the 105, a pavilion containing twenty was a free gift, and the total cost of the other eighty-five beds, according to the published accounts, worked out at £213 a bed without land or furniture, and the sanatorium had no electric lighting or generating plant (with its necessary building), no laundry, no covered way between its pavilions, etc.

The fact was the cost of any large sanatorium was affected by distance from railway-station, distance from brickfields or source of supply of other materials; drainage, or lack of it; water supply, or the lack of it; power and lighting; plant; laundry; heating and hot-water plant.

Engineering plant of all sorts cost about 33 per cent. of the whole, while the cost of the patients' pavilions was about the same.

He was told that small twenty-bed hospitals or sanatoria could not be built under about £200 per bed, with no laundries or generating stations. It must be borne in mind that

ROYAL SOUTH HANTS & SOUTHAMPTON HOSPITAL.



Messrs. Young & Hall, Architects. (See page 246.)

Rear of Block A. Entrance. Nurses' Home. Garage and Stable. Laundry, Power House, etc.

Mount Vernon Hospital, Northwood. Mr. Frederick Wheeler, F.R.I.B.A., Architect. (See page 246.)

Pont-y-Wal was a large village of 400 sick people. When they got their tender they would know what the cost really was of such a sanatorium designed on the most economical lines, and he would be delighted if they got it erected at anything like £150 a bed, because that would be a record for a big institution complete in every way as this one would be. Whatever the building cost, he felt sure they would never get one cheaper.

Dr. Robertson (Medical Officer of Health, Birmingham) congratulated Mr. Hall on designing what he believed was the best example of what he liked to call the English design of sanatorium, because their design for such buildings differed very much from those of Germany, Switzerland, and America. As a medical man he believed the buildings would be about as efficient as one could wish for. He also congratulated the author on having housed the patients in one-story buildings in an institution of such a size, and would have liked to have seen the nurses housed in the same way. He suggested that it was a mistake not to plaster the walls, and would have preferred terrazzo flooring, as he considered that the ease with which they could be cleaned compensated for the extra cost. He also advocated larger rooms for the patients.

Mr. Osborne Smith, F.R.I.B.A., thought Mr. Hall was honestly to be congratulated on the amount of accommodation he reckoned he was going to get for his money and on the compact way in which the whole thing had been arranged, both as regarded the working of the establishment and also the provision of light and heat and so on. Mr. Hall was a man of common sense, and had brought all his knowledge and skill to bear in working out the scheme. He took it that there were no by-laws at Pont-y-Wal.

Mr. Hall said there were not.

Mr. Smith said that was a comforting thing. He did not think that dinging the walls in this case was satisfactory, as it left a rough surface and it would be better to have plaster. As to flooring, if they had a concrete floor and covered it with really good linoleum they got a jointless surface which could be kept as clean as terrazzo, and was also warm for the feet.

Dr. L. Parke (Medical Officer of Health, Chelsea) considered that the policy of keeping down cost could be carried too far, for it was not a good thing to ask patients to go to live in what were not much more that cattle sheds. He agreed with Mr. Smith as to the walls.

Mr. Hall said the walls were of ferro-concrete, trowelled absolutely smooth and distempered, and they were therefore as good as plaster.

Dr. Parke thought that £150 per bed was absurd if it had to include land and furniture. He believed that sanatorium treatment was only a phase, and if the housing of the people was improved the money would be better spent.

Mr. Hall in reply, said the size of the rooms was laid down by the Government, and it was on these little rooms that they based their little price. He was afraid there was a misconception as to what dinging meant, but his specification read: "Dinging is a thin skin of Portland cement about ¼ in. thick, trowelled to a smooth surface." Terrazzo was a nice flooring, but not at £150 a bed. They were making granolithic concrete floors to the wards and providing thick mats at the side of every bed for the patients to stand on.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.

THE new Out-Patients' Department at this building was built at the expense of Miss Burrell, as a memorial to her brother. It is an isolated building connected with the hospital by a covered way.

Besides the usual consulting and examining rooms, waiting hall, dispensary, etc., the building provides a complete casualty department, an operation-room for minor operations, and a completely fitted electrical department.

The general contractors were Messrs. H. Stevens & Co., of Southampton; ferro-concrete roof to waiting hall by Messrs. Moss & Son, of Loughborough; flat roofs (steel and concrete) by the Fawcett Construction Company; electric wiring and fittings by Messrs. H. Davis & Co., of Southampton; wrought-iron work by Messrs. Wragge & Co.

YOUNG & HALL.

THE MILLER GENERAL HOSPITAL, GREENWICH.

THE new ward wing, plans of which we publish, is part of a general scheme for a large hospital, and the plans show three stories of wards and a complete operation suite on the top story. The linen-room and other rooms on the top floor are temporary arrangements only. In the basement the electrical department has been installed, also a temporary arrangement.

The nursing staff and servants are housed in the existing premises in the Greenwich-road, which have been acquired by the hospital.

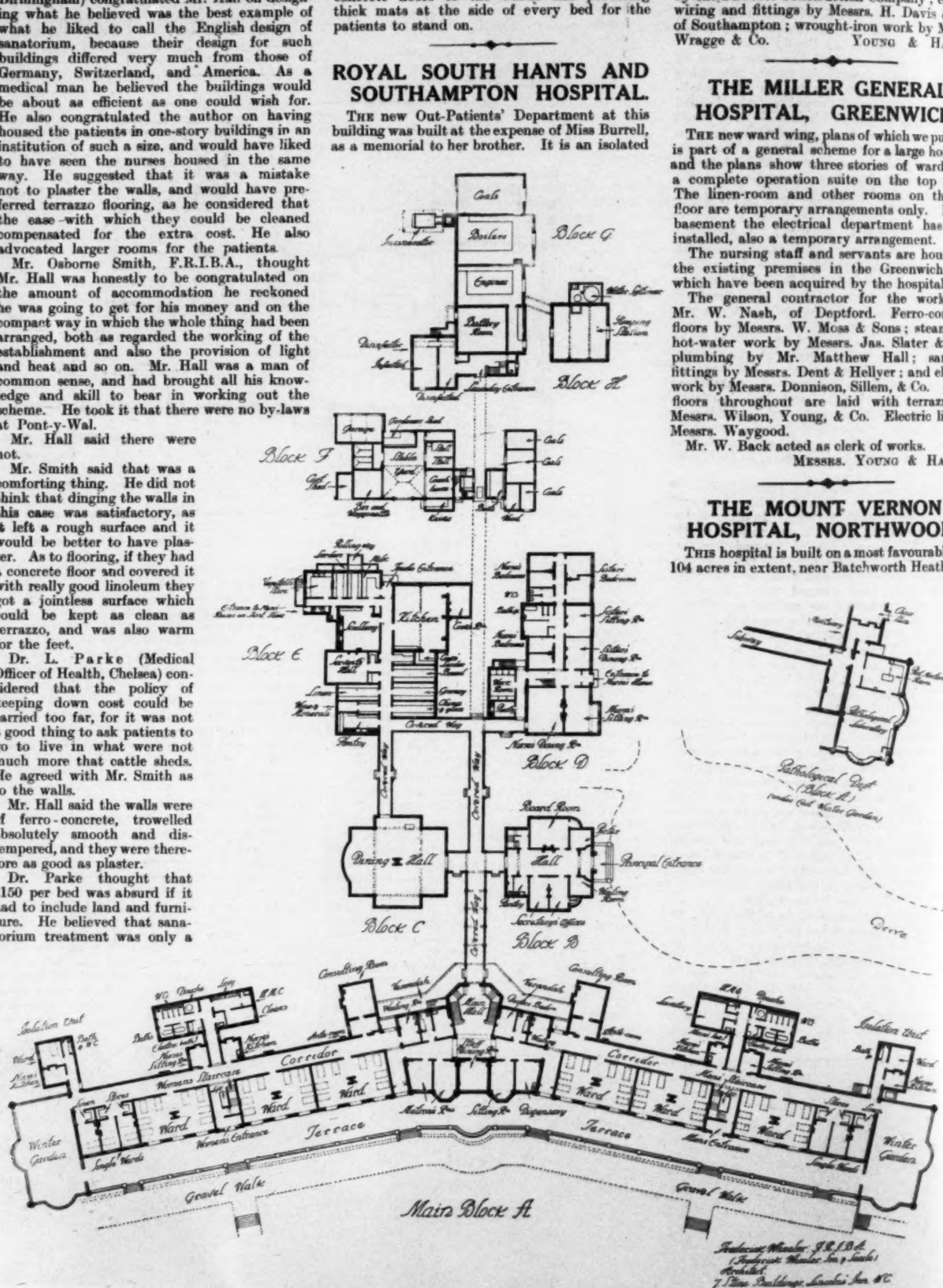
The general contractor for the work was Mr. W. Nash, of Deptford. Ferro-concrete floors by Messrs. W. Moss & Sons; steam and hot-water work by Messrs. Jas. Slater & Co.; plumbing by Mr. Matthew Hall; sanitary fittings by Messrs. Dent & Hellyer; and electric work by Messrs. Donnison, Sillem, & Co. Ward floors throughout are laid with terrazzo by Messrs. Wilson, Young, & Co. Electric lift by Messrs. Waygood.

Mr. W. Back acted as clerk of works.

MESSRS. YOUNG & HALL.

THE MOUNT VERNON HOSPITAL, NORTHWOOD.

THIS hospital is built on a most favourable site 104 acres in extent, near Batchworth Heath, and



Mount Vernon Hospital, Northwood: Ground Plan.

Mr. Frederick Wheeler, F.R.I.B.A., Architect.

16 miles from town. The altitude is 375 ft. above sea level, and the soil sand, and gravel overlaying chalk. The estate is well timbered with old pines.

The hospital (built on a southern slope) at present provides for 116 patients, fifty-eight of each sex. As a result of successful working of the institution, accommodation for 100 further patients is about to be provided, drawings for which are now being prepared by Messrs. Frederick Wheeler, Son, & Searle.

The present buildings comprise eight blocks connected by covered ways which in certain cases are enclosed, and in others open according to the necessities. These eight blocks are :—

Block A (the Hospital proper) contains the whole of the ward accommodation, arranged in two extended wings (two-storied) to the east and west of a three-storied centre portion.

On the ground floor in each wing are three wards for ten beds, and three single bed wards, and on the first floor two wards for ten beds and three single-bed wards. These all have a southerly aspect, the windows being of the casement type (opening on to a wide terrace and balcony respectively) with fanlights over. In addition there is an isolation unit on the ground floor in each wing, comprising single-bed ward with kitchen, bathroom, water-closet, etc. In no case is the cubic space allowance per patient less than 1,400 ft. The sanitary spurs (on the north side of the main corridor) are arranged principally for the use of ambulant patients. These contain, in addition to the usual fittings, electric and douche baths for each sex. On the first floor in each wing there is a large recreation-room and reading-room for patients, conveniently accessible to all by means of wide staircases. Also a passenger (bed) lift is provided in each case. A large winter garden at the end of each wing further provides for the recreation of patients in cold or inclement weather.

In the central portion of Block A are placed private suites for the matron and a doctor, examination-rooms, consulting-rooms, X-ray-room, and dispensary, with the necessary waiting-rooms, etc. Sleeping accommodation for the maidservants is provided on the second floor in this portion of the block conveniently for supervision by the matron.

The Pathological Department, comprising post-mortem-room, laboratory, dark-room, etc., is completely equipped with all necessary fittings for research work, including an incubator.

Block B (Principal Entrance) contains, on the ground floor, the Administrative Offices, Board-room, etc., and on the upper floors the residence of the Medical Superintendent, comprising two reception-rooms and five bedrooms, with necessary offices.

Block C (Patients' Dining-hall).—This hall, which is lofty and well lighted from three sides, is arranged for small tables.

Block E (Kitchen Building) was designed on a sufficient scale to meet the requirements of the further patients now proposed to be received, and comprises kitchen, scullery, larder, and store accommodation, large pantry in connection with special service corridor to dining-hall, stores for table linen, china, and glass, and servants' hall.

Attached to this block is accommodation for resident menservants (gardeners, etc.) on first floor, and having a separate external entrance.

Block D (Nurses' Home) provides accommodation for thirty Sisters and nurses, including large dining-room with pantry, etc., sitting-rooms, and separate bedrooms of comfortable size, those for the night staff so cut off from the remainder as to ensure quiet conditions during the day.

Block F (Stable and Garage Building).—Stable accommodation, two stalls, two coach-houses, cart-shed, etc. Garage accommodation for three cars. Three large coal stores, wood store, knives and boot rooms, etc., are here provided. Also living accommodation for coachman and chauffeur.

Block G (Laundry and Power Station).—The laundry is on an extensive scale, fitted with machinery and apparatus of the most approved types. Disinfecting-rooms adjoin the entrance, and the staff and patients' clothes are kept separate.

The electrical plant is laid down in duplicate, and supplies current for all purposes to the whole of the hospital buildings and also to the Chapel in the grounds.

Block H (Pump House).—The water supply is obtained from an artesian well and lifted into receiving tanks and thence to reservoir tanks in the central tower of Block A. A water-softening apparatus is installed.

In case of a breakdown of electric-power, the pumps can be worked by steam.

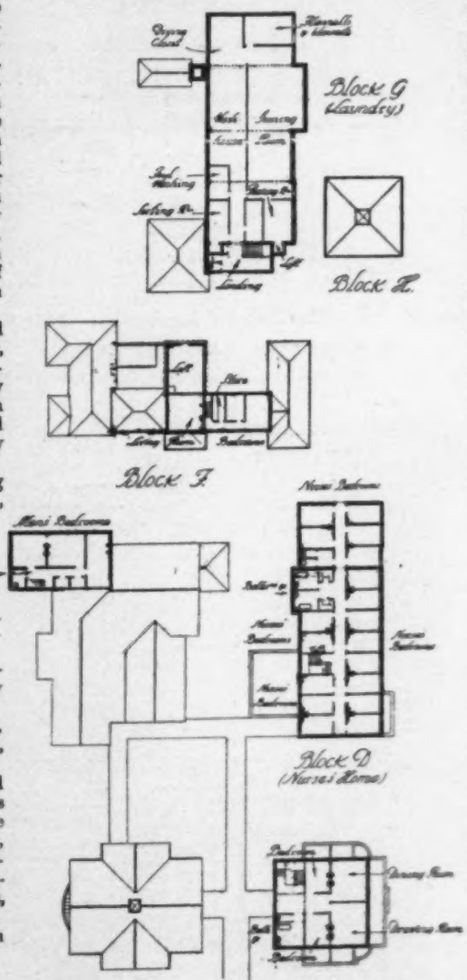
A special fire main is provided, with motor pump, which is available as an auxiliary to the general pumping plant.

Open fireplaces are provided throughout the buildings, in addition to a system of purified warm air heating. A hot-water system (by steam) is also provided.

The buildings generally are in Luton grey bricks with red brick and stone dressings and tiled roofs.

The Chapel (with Mortuary Chapel under) is in stone and knapped flints, the internal woodwork being in oak.

The general contractors were Messrs. Holland & Hannen, and the principal subcontractors :—Laundry plant, Messrs. Manlove, Alliott, & Co. ; pumping and plumbing, Messrs. D. T. Bostel & Sons; fireplaces, Messrs. Teale & Co. ; tiling, paving, etc., Messrs. Bryon & Co. ; winter gardens, the Coalbrookdale Company ; fire mains, hydrants, etc., Messrs. Merryweather & Co. ; cooking apparatus, etc., Messrs. F. J. May & Co. ; water-softening plant, the Stanhope Company ; sanitary fittings, Messrs. Tylor & Co. and Messrs. Twyford & Co. ; lifts, the Otis Company ; electrical baths and X-ray apparatus, Messrs. Harry W. Cox, Ltd.



Mount Vernon Hospital, Northwood : First Floor Plan.

Mr. Frederick Wheeler, F.R.I.B.A., Architect.

KING'S COLLEGE HOSPITAL.

THE illustrations show the Out-Patients', Casualty, Bathing, Electrical, and Dispensary Departments attached to the hospital, and are situate at the lower corner of the site nearest Denmark-hill.

The Casualty and Out-Patients' Departments flank an entrance court 40 ft. wide, at the head of which is the general entrance to the hospital receiving-rooms and baths.

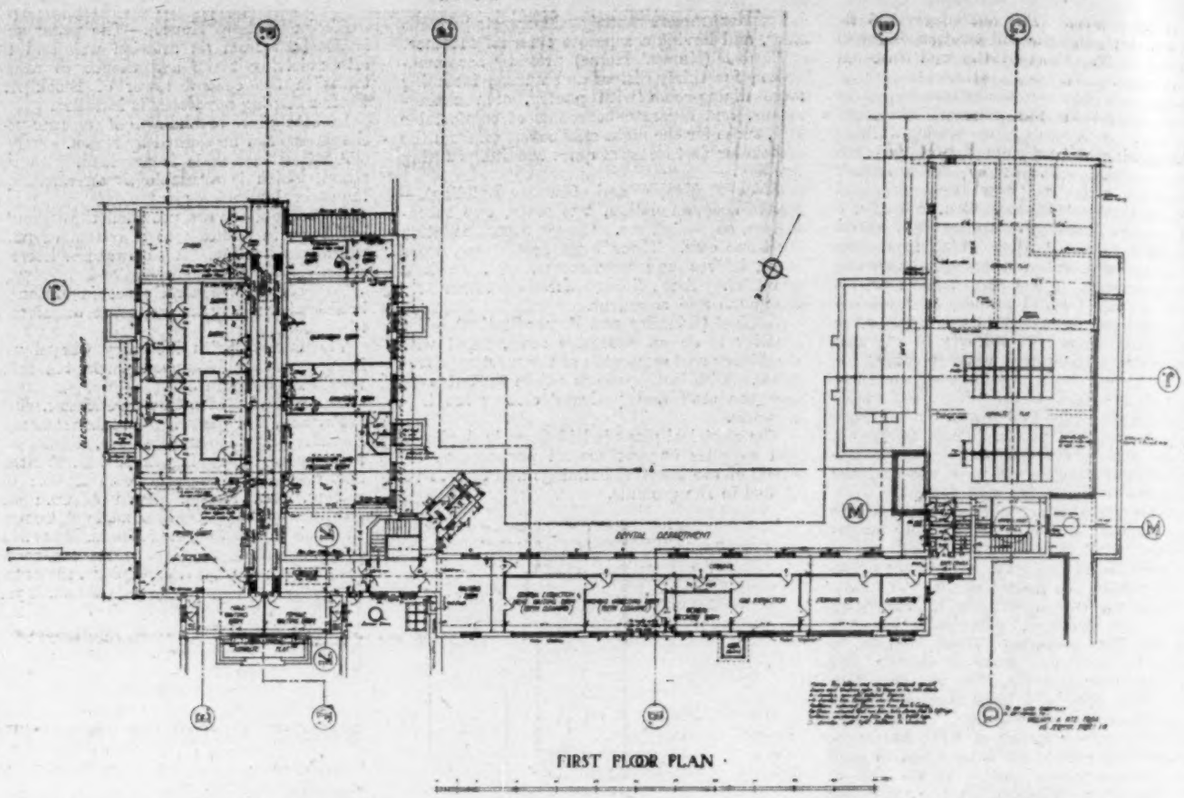
The Casualty Department provides for the immediate treatment of major and minor casualties, both surgical and medical. A separate entrance leading to the surgery is provided for the admission of serious accidents.

On the first floor a small observation ward, complete with ward kitchen, etc., is provided for the reception of urgent cases which are desired to be kept under observation prior to being admitted to the wards proper.

The Out-Patients' Department is entered through registering offices situated on both sides of the vestibule to the large waiting-hall, 93 ft. by 42 ft., with a buffet in the centre. Served by a corridor surrounding this hall are the various departments with their minor operating theatres, the whole so arranged that patients, having consulted the doctor, do not retrace their steps in gaining access to the dispensary.

The latter department, serving both out and in patients, has direct lift communication to the drug and surgical stores below, and the medicine lift conveys the dispensary trolleys to all floors of the hospital.

The Electrical Department on the first floor is common to the use of the Out-Patients'



King's College Hospital, Denmark-hill, S.E. : Out-Patients' Department. First Floor and Roof (Back Portion).

Mr. William A. Pite, F.R.I.B.A., Architect.

(For Front Portion, see other plan.)

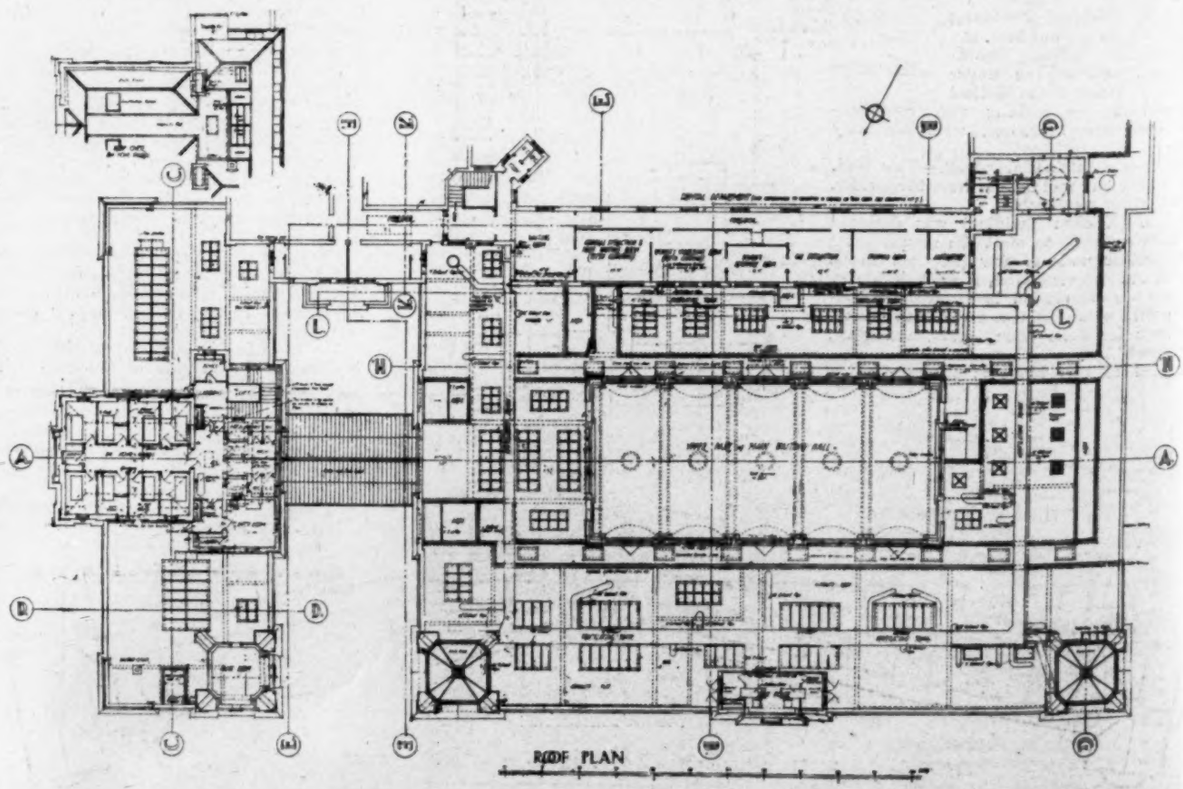
Department and to the hospital proper; and the placing of the Dental Department gives excellent north lighting and a direct way down to the dispensary and exits.

A large amount of top-light and natural cross ventilation is obtained to the blocks, and, in addition, forced extracts and warm-air inlets are provided.

Principally "Durato" and asphalt are used for flooring, and "Granitic" plaster "Paripan" painted for the walls and ceilings, except in the waiting-halls which are lined with vitreous terra-cotta, and the bathing establishment, which is built with buff-coloured glazed brick.

The whole of the interiors are plain, much attention being paid to the provision of hospital detail.

The fabric is of dark well-burnt London



King's College Hospital, Denmark-hill, S.E. : Out-Patients' Department. First Floor and Roof (Front Portion).

Mr. William A. Pite, F.R.I.B.A., Architect.

(For Back Portion, see other plan.)

stock brick relieved with red-brick window dressings and Portland stone cornices, quoins, and features. The front to Bessemer-road is but a portion of the principal façade of the hospital.

WANDSWORTH UNION INFIRMARY.

THE new Infirmary Buildings have been erected on the ground which previously formed the gardens to the Branch Workhouse, St. James'-road, and the blocks have been so arranged that they in no way interfere with these previously erected buildings.

The principal entrance to the Infirmary is in Ouseley-road, and has adjacent to it the porter's office, with weighbridge, so that the porter has complete control over all traffic in and out of the buildings.

In the same block of buildings are placed the general waiting-room, with male and female lavatories attached, and the ambulance station, where accommodation is required for two motor ambulances.

Past the entrance block we come to the main buildings, arranged in five separate buildings, with the administration block in the centre and the female wards on the north and the male wards on the south of the site.

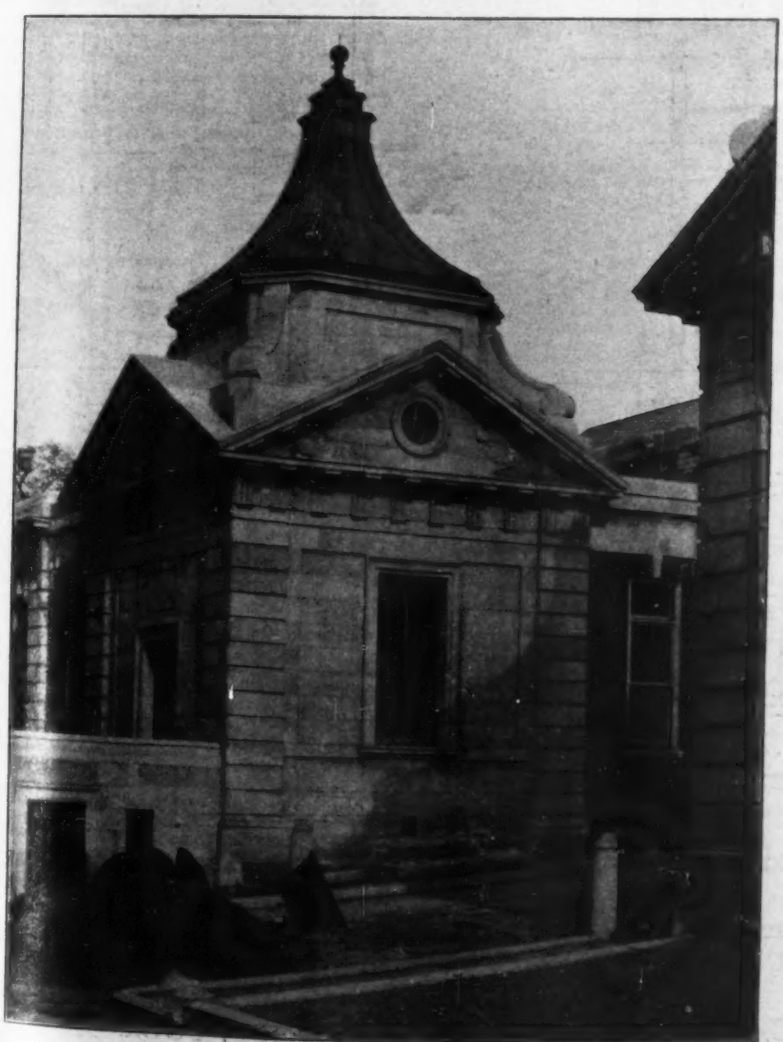
The administration block is two stories in height and comprises on the ground floor the principal entrance and hall, with Guardians' Board-room, nurses' dining-room, steward's stores and offices, and in the rear the main kitchen and scullery, where the cooking is done for all the wards and staff.

The cooking apparatus in this kitchen is of the latest and most up-to-date arrangements, thus reducing the amount of work requiring to be done in an institution of this character to the minimum.

King's College Hospital.

Mr. William A. Pite, F.R.I.B.A., Architect.

The food after being prepared is served through hatchways on to special trollies in the main corridor, and is wheeled from here to the different ward blocks, and distributed among the patients, the upper floors being served by lifts arranged for this purpose.



King's College Hospital.

Mr. William A. Pite, F.R.I.B.A., Architect.

The upper floor of the administration block is arranged to accommodate the Assistant Medical Officer and male servants on one side and the Matron, Assistant Matron, and female servants on the opposite side.

The Assistant Medical Officer and Matron and her assistant have each a small suite containing sitting-room and bedroom.

The general coal store is in the basement, and an electric lift is placed in close proximity serving on to the main corridor on the upper floors for distribution to the various blocks.

At the rear of this block a wide corridor runs north and south on three floors, giving direct access to the male and female wards and receiving blocks.

The ward blocks are arranged exactly alike on the two sides of the centre buildings, and give a total accommodation for 600 beds.

They are arranged in three stories in height, the two large end blocks containing 204 beds each, and the smaller intermediate blocks providing accommodation for ninety-six patients each.

In addition to the large wards in these blocks there are also provided on each floor smaller wards for the treatment of special cases. Each floor of each block has its own duty-room or ward kitchen, where it is possible to prepare any nourishment required other than is prepared in the main kitchen.

The sanitary block, containing the necessary accommodation for the wards, has been placed in a projecting wing from the main building, and is thus assured of a thorough means of ventilation.

These blocks and all the bathrooms and corridors have been lined halfway up with terrazzo, thus giving a smooth and durable surface with the absence of any joints or other footholds for dust and dirt.

This has been a prime consideration throughout these buildings, and in every instance the corners and angles of floors or walls and ceilings have been rounded off so as to prevent any accumulation whatsoever.

In each of the large wards stoves are placed in the centre of the floor and fresh air is drawn in along pipes in the thickness of the floor, and after passing through the stoves is discharged into the wards through gratings at the sides, which, of course, can be regulated as desired.

The smoke is extracted on the opposite side of the stove along flues in the floor to the chimney-stacks outside, thus keeping a clear unobstructed view of the wards.

The ends of the wards form large bay windows, and the larger wards have open fireplaces at these ends, where patients can sit round who are able to leave their beds. The smaller ward blocks have day-rooms in addition on each floor. Sunning balconies are also provided to the wards with doors opening on to same, where patients can be taken out on fine days. All the wards have wide external fire-escape

stairs in addition to the staircases provided in the buildings themselves, and give immediate escape into the grounds should occasion arise. The two receiving wards, male and female, are attached to the main corridor on the ground floor, and have receiving-rooms with wards attached.

Above the male receiving block on first floor is placed the operating theatre, and accessible from the main corridor on this floor. This room, with its adjoining rooms, has been fitted up with the most modern fittings required, and careful consideration has been expended on the finishings of walls, doors, etc., where the absence of all projections in the form of decoration is essential.

The theatre is well lighted by a large window on the north-east, and in addition has a long top light, and the heating of this room has required special attention to ensure an even temperature, and special radiators are therefore employed to swing out into the room. Adjoining is the robing-room, fitted with special cupboards for warming blankets, etc., and the sterilising and anæsthetic-rooms complete this suite.

The mortuary block is placed apart from the other building in the south-east corner of the site in a position easily accessible from the entrance without having to pass in front of the other buildings. This block consists of a well-equipped post-mortem-room with mortuary adjoining.

The boiler-house, where all the heating and hot water for all the buildings is generated, is at the rear of the administration block, and comprises a large heating chamber with two Lancashire boilers, 28 ft. by 7 ft. 6 in., and storage for coal. A pump-room adjoins in the basement, where two electrically-driven pumps force the hot water up through the pipes to the radiators in the different parts of the buildings. A large engineer's workshop with open yard is also provided, and a disinfecting-room, where all blankets, clothes, etc., are subjected to a thorough cleansing in a steam disinfector before being put away. Above this block a large clothes store is provided for the storage of patients' clothes, and is divided up by open spar shelving into pigeon-hole divisions for this purpose.

Over the main corridor at this part of the building a large tower has been erected for the storage of water and a water-softening apparatus, so as to reduce the hardness of the water passing into the boilers and thus preserve them much longer. The water tank in this tower has a capacity of 6,000 gallons, and supplies all the cisterns throughout, the large blocks having 2,000 gallons each and the smaller blocks from 1,000 to 200 gallons. Also on the ground floor main corridor, in the rear of the administration buildings, are placed the dispensary and drug store and a large and well-lighted linen-mending-room. On the outside of this block a room for receiving soiled linen is provided with two large steeping tanks.

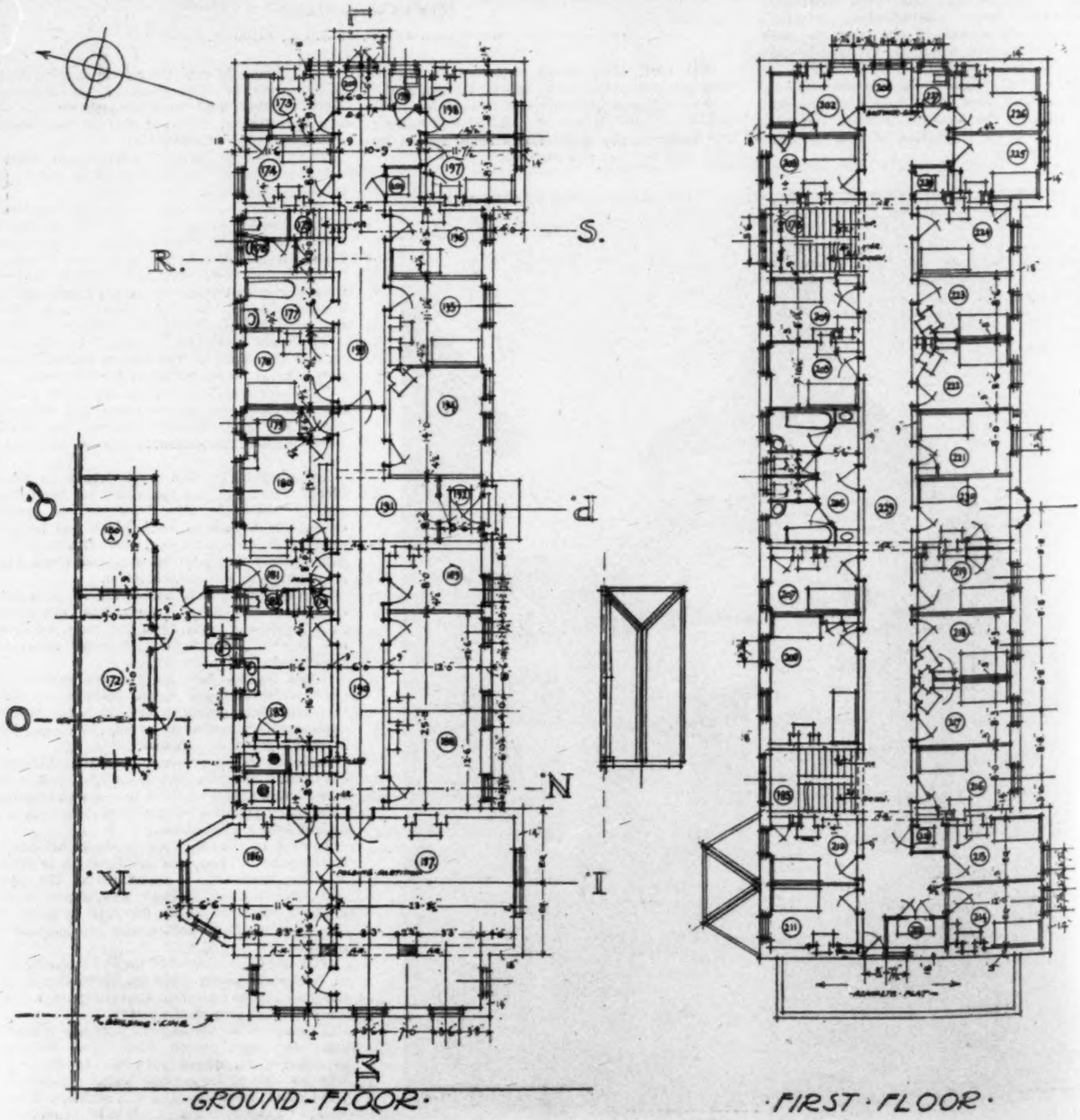
The Nurses' Home is a separate building at the north-west corner of the site, with a southern aspect, and provides accommodation for seventy-five nurses and six servants. On the ground floor there are two large and cheerful recreation-rooms, which, by means of sliding-doors, can be thrown into one large room for the nurses and Sisters, and a good-sized library, a Home Sister's office, waiting-room, kitchen, and cloak and lavatory accommodation, all accessible from a wide corridor the entire length of the building.

At the east end a large luggage lift is provided, and has access on the ground floor level from the outside as well as inside, so that boxes, etc., can be put on without first entering the building and taken up to a large box-room on the top floor into which the lift discharges.

The three upper floors are entirely given up to bedroom accommodation for the nurses and Sisters, and are divided up into small rooms for that purpose, and on each floor good lavatory and bathrooms are provided. At the north-west corner of this block a room has been set aside for sickness and has accommodation for three beds.

The contract price for the erection of these buildings amounted to £66,500, and the work was commenced in September, 1908.

The buildings have been carried out in accordance with the plans prepared by and



Wandsworth Union Infirmary: Nurses' Home.

Mr. James S. Gibson, F.R.I.B.A., Architect.

under the supervision of Mr. James S. Gibson, F.R.I.B.A., the architect entrusted with the carrying out of this work.

The general contractors were Messrs. Wm. Johnson & Co., of Wandsworth Common, who obtained the contract in open competition.

The heating, which is by low-pressure hot water throughout, and the hot-water services have been carried out by Messrs. Moorwood, Sons, & Co., of Sheffield, and according to the design of and under the instruction of Mr E. R. Dolby, consulting engineer.

Messrs. Clift Ford, of Willesden Junction, secured the contract for the laying-out of the roads and grounds surrounding the buildings, the contract amount being £2,400. The following firms have also been engaged in the work:—

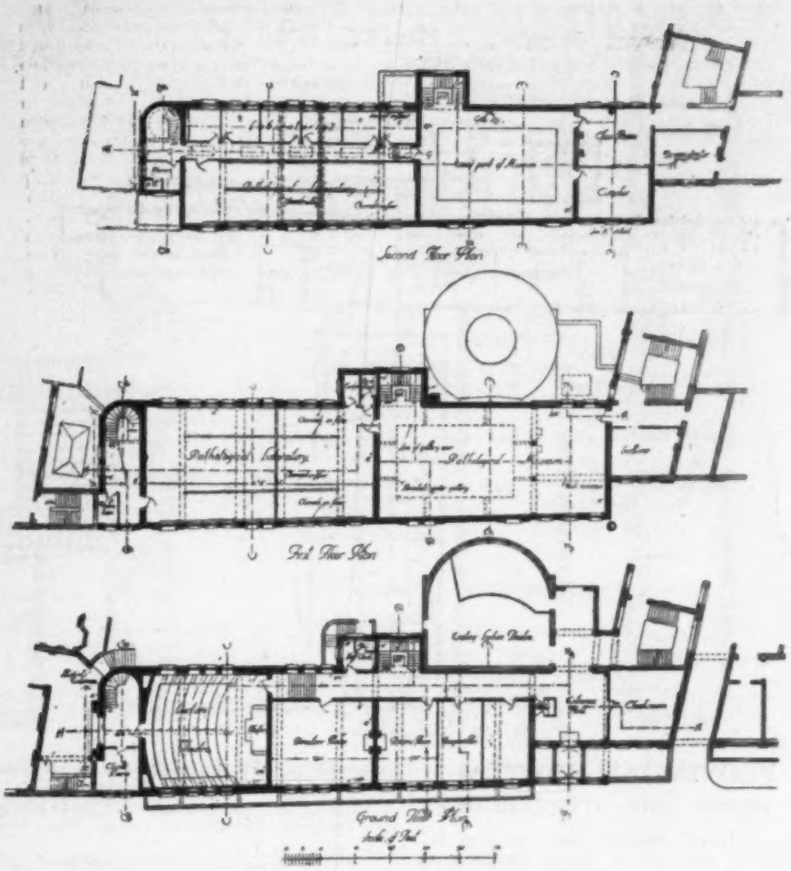
Fireplaces, the Well Fire Company.
Fireproof construction, the British Fireproof Construction Company.
Fire appliances, Messrs. Merryweather.
Flooring and paving, Messrs. Diespeker, Ltd., and Van Straaten & Co.
Lifts, the Easton Lift Company.
Lighting, Messrs. G. E. Taylor & Co.
Sanitary work, Messrs. Doultons.

Mr. George Hopper has acted throughout as clerk of works on these buildings. The quantity surveyors were Messrs. Young & Brown.

THE PATHOLOGICAL INSTITUTE, MIDDLESEX HOSPITAL.

THIS building is being erected to provide a complete self-contained department for pathological teaching and research. On the ground floor a new lecture-room is provided, also a room for the director of the department, dean's room, diagram-room, cloak-room, entrance hall, and porter's office. The basement rooms will be devoted to various departments of the work, but the final arrangements are not yet fixed. On the first floor is a large laboratory with accommodation for 128 students and a sterile-room and sterilising-room. The rest of the floor is taken up by the museum. On the second floor is a smaller general laboratory and six small laboratories, with the gallery of the museum and the curator's room.

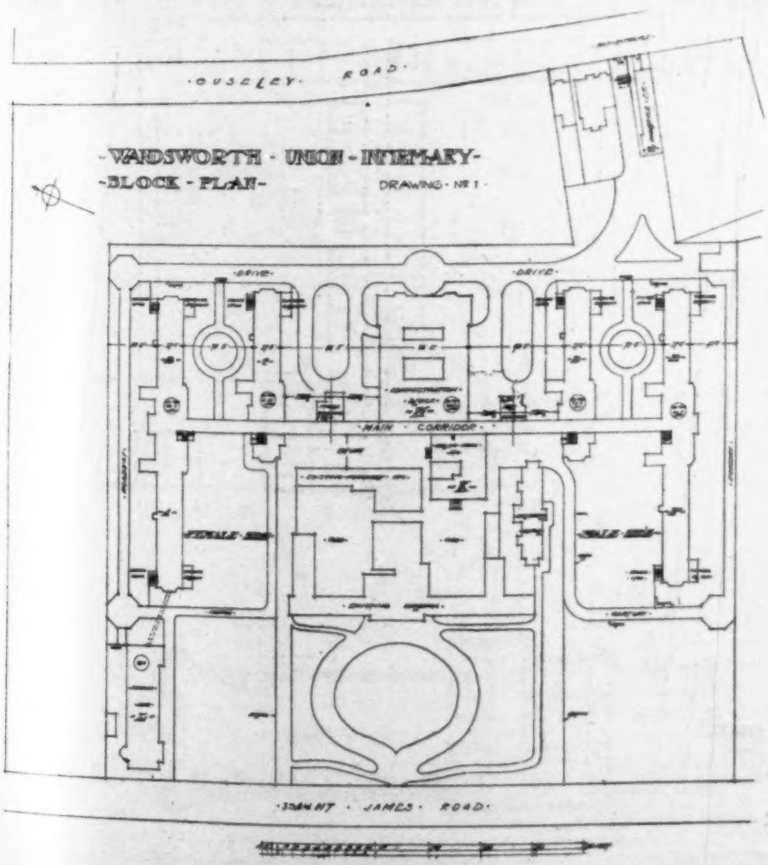
Mr. Keith D. Young (Messrs. Young & Hall) is the architect.



The Pathological Institute, Middlesex Hospital, W.
Mr. Keith D. Young, F.R.I.B.A., Architect.

The following have been engaged in the work:—

Quantity surveyors, Messrs. Ruault & Young.
Builders and general contractors, Messrs. Perry & Co.
Steel and iron construction, the Fawcett Con-
Asphalt, the London Asphalte Company.
Bricks—facing bricks—Messrs. T. Lawrence & Son (Bracknell).
Fireplaces, the Teale Fireplace Company.
Flooring and paving, Messrs. Burke & Co.
Heating, Messrs. J. Slater & Co.
Otis Elevator Company.
Lighting, Messrs. Donnison, Sillem, & Co.
Sanitary work, Messrs. Dent & Hellyer.



Block Plan.
Mr. James S. Gibson, F.R.I.B.A., Architect.

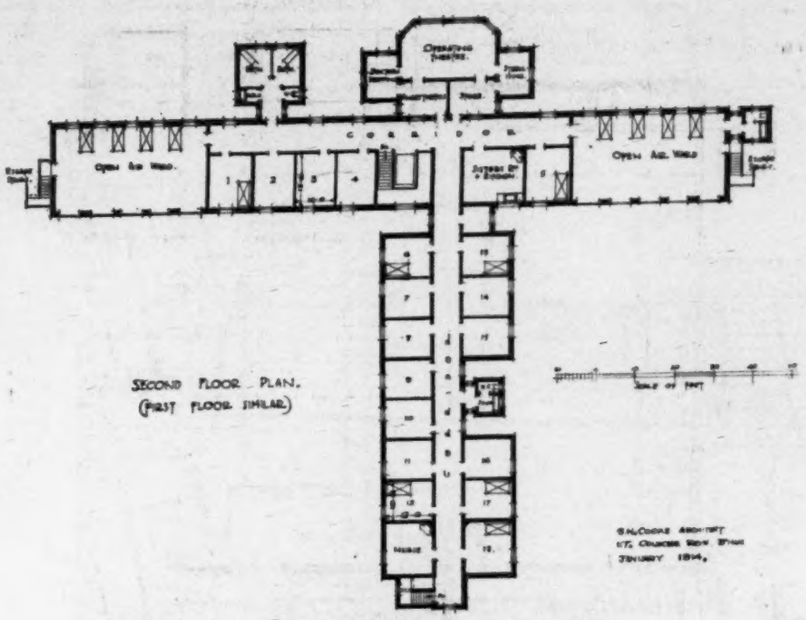
PRIVATE HOSPITAL, BIRMINGHAM.

THIS building is being erected in the Hagley-road, Edgbaston. It has been designed to accommodate about one hundred patients, and has been termed a non-charitable self-supporting institution, where such patients can be treated as are not able to afford the heavy expense of a private operation, and who are yet not of the class for whom the voluntary hospitals are primarily intended. Such hospitals exist in America, and have been a great success. A large freehold site in the Hagley-road, with a large house on it, was purchased. The present building is being altered, and will contain the necessary administration-rooms and nurses' home. The new portion of the building will form a thoroughly efficient private hospital, with two operating theatres, in the planning of which the architect has had the assistance and advice of the Medical Committee. The building has been so planned that every room obtains the sun. Four larger wards, providing accommodation for five and eight beds, have been provided, and have been so arranged to absorb the corridor. On the top floor two roof gardens have been provided, and the roofs are flat to enable future extension, if necessary. While the cost has been one of the most important factors in the scheme, the building is nevertheless being substantially built; the floors are by Messrs. Kleine, and finished with wood block, the operating theatre and lavatory blocks finished with terrazzo.

The capital expenditure, including all equipment and furnishing, will be about £20,000, which is £200 per bed, and it is believed that this is a record for a hospital building. In any case, it compares very favourably with some of the hospitals erected a few years ago which cost £1,000 per bed.

S. N. COOKE.

PRIVATE HOSPITAL, HAGLEY ROAD, BIRMINGHAM.



Mr. S. N. Cooke, Architect. (See page 251.)

A PROVINCIAL HOSPITAL: ITS DESIGN AND CONSTRUCTION.*

I HAVE been invited by the Council of the Hampshire and Isle of Wight Architectural Association to read you this paper on "A Provincial Hospital: its Design and Construction," and I do so with pleasure, for it gives me an opportunity of showing you over and describing to you both generally and in detail the rise and progress of a charitable institution, the Royal Boscombe Hospital, now the Boscombe Branch of the Royal Victoria and West Hants Hospital, which many of you here have been deeply interested in extending over a period of some eighteen years.

History of the Hospital.

In 1897 it was found that the then existing Cottage Hospital in Shelley-road required enlarging and being brought up to date. Competitive designs were invited, and I was the fortunate winner of the competition. Before any work was commenced the Governors, with Sir John Thursby as President, came to the very wise conclusion that a new hospital was necessary on a much less confined site. The land of the present site was purchased, and my scheme—a scheme that has never been seriously departed from since—was adopted, and the first section, the "Empress Victoria" and "Lady Wills" wards for men and women patients was erected, together with a portion of the main corridor, the ward kitchens, and isolation block on the north side of it. At a later date there followed, owing to the need for temporary children's accommodation, the erection of the octagonally-shaped "Irene Ward," with the Board-room beneath, and second isolation ward, the "Elizabeth Jackson Ward," with lavatory accommodation for the nursing staff, which has been until recently housed in the "Old Hospital," as it is called, with the then new kitchen additions, all of which are connected with the new buildings by means of a corrugated-iron corridor somewhat slightingly known, now that its years of service are nearly over, as the "Twopenny Tube," a temporary measure still in existence and serviceable.

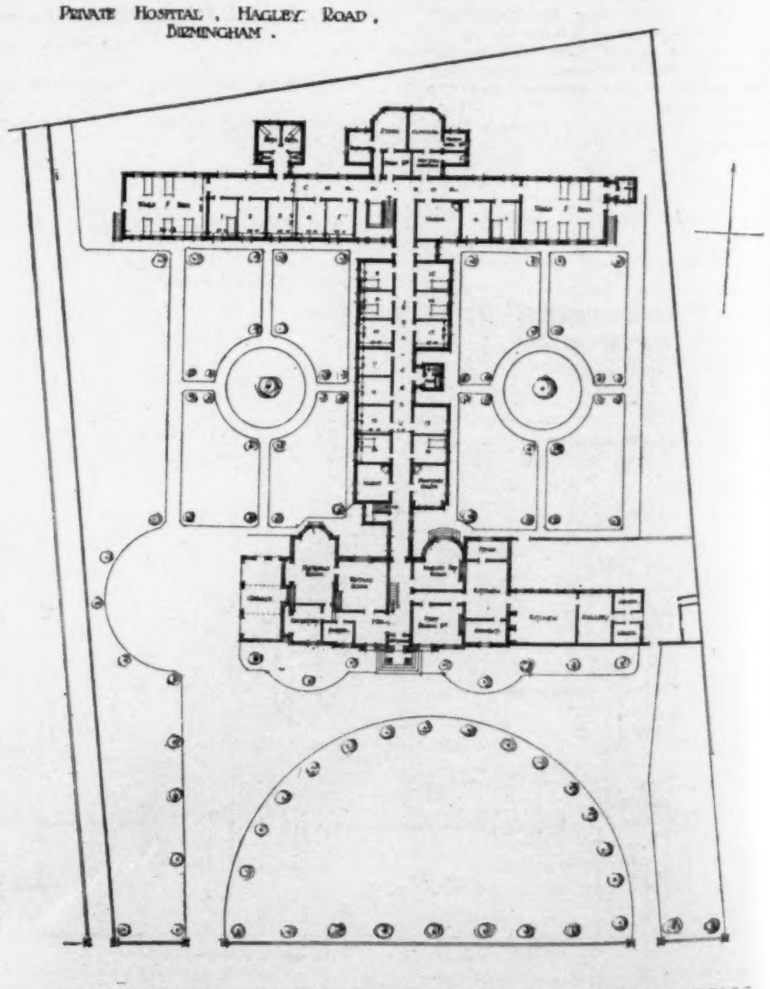
You will note how the development proceeded to grow from the west towards the east until the Ashley-road frontage facing the Boscombe Railway Station was reached. The reason for this was twofold—first, to retain connection with and make use of the existing building, and, secondly, when sufficient ward accommodation had been erected to create new administrative quarters on the main street with a view to concentrating the administration on the front in a compact and easily workable manner.

There was, however, greater need for an Out-Patients' Department, and this must obviously be placed on the main road near the station. This department in which we now find ourselves was planned and carried out by Mr. Keith Young, the well-known hospital expert, and myself, as joint architects, and opened by her Royal Highness Princess Alexander of Teck in 1909, and we are now working in conjunction on the steadily rising administration block, the magnificent gift of the Wills' family, and which, we trust, will be of immense value to the institution, providing as it will also, we hope, in the immediate future the much-needed kitchens to serve the whole of the buildings from a central position. I have now, however, to draw your attention to the fact that between the completion of the Out-Patients' Department and the commencement of the adjacent administration block several years elapsed, and it was during this period of waiting that, realising the great need for an extension of accommodation for women and children, another of our generous benefactors, Mr. Child-Clark, came forward with the noble gift of the new children's ward, with its ward kitchen and extension of main corridor. This fine block followed my design for the older ward blocks, but various improvements were made to the advantage of the later work, including store-rooms under the ward kitchen and the "merry and bright" encaustic tile pictures on the walls of the ward, which you will see to-day.

The mortuary, with a pathological-room and the steam laundry, have been added at different dates, and I am now engaged in supervising the erection of the new administration block and the Gardiner Memorial Separation Ward, connected by the extensions of the main corridor shortly, at last to be completed from end to end.

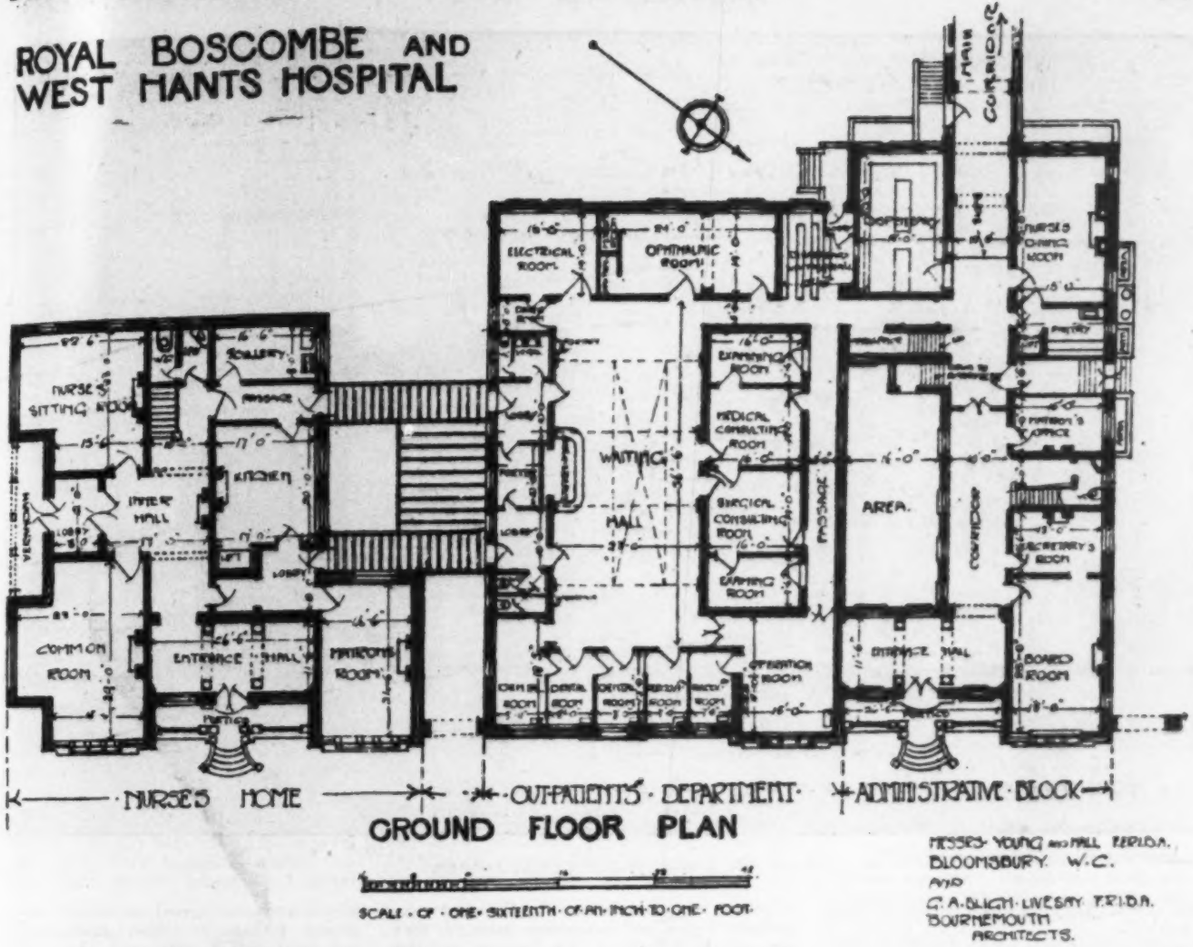
I should like to mention in passing that the hospital is as yet by no means completed, and there is a great deal left to be carried out

PRIVATE HOSPITAL, HAGLEY ROAD, BIRMINGHAM.



Mr. S. N. Cooke, Architect. (See pag 251.)

* From a paper by Mr. G. A Bligh Livesay, read at a recent meeting at Bournemouth of the Hampshire and Isle of Wight Architectural Association.



should, and when, increased accommodation becomes a necessity in the future. The wards are so planned and constructed as to be doubled by the addition of another story by the simple means of "jacking up" the roof, raising the walls and completing the upper wards, while the existing wards are in occupation underneath, and this work could be carried out in short time and very inexpensively. Again, some day the wards can be easily doubled in length, and these extensions, taken together with the existing, would provide 178 beds in place of the existing number of sixty-eight. What, however, is more likely to be required at an earlier date is the addition of a carefully-planned and well-appointed modern operation theatre in the north-west angle of the site, at the head of the main corridor, thus permitting the men's isolation ward, now used as a temporary operation theatre, to be restored to its proper use, and providing the necessary isolation wards for each sex. This work has been entrusted to my firm, and the plans are in course of preparation for contract.

Still further scope for development would embrace the much-needed Nurses' Home for the housing of the nursing staff at present distributed in various cottages near by, a temporary arrangement which, it must be agreed, can be neither economical nor conducive to the comfort of the nurses. From this outline you will, I trust, gather some idea of the history of the buildings as existing, in the course of erection, and those required in the future, all of which form part of a comprehensive scheme more or less planned and designed as long ago as the year of our Lord 1898.

Mr. A. Saxon Snell, F.R.I.B.A., Architect. (See page 255.)

Accommodation.

The existing accommodation of this branch of the hospital is as follows:—

	Cubic Feet of Air Space per Bed.	No. of Beds.
The Empress Victoria Ward for men	1,350	18
The Lady Wills Ward for women.....	1,350	18
The Child-Clark Ward for children...	1,450	18
The Irene Ward for women	1,000	8
Two isolation wards	1,100	4
The Gardiner Memorial Ward	1,250	2
Giving the present total number of beds at 68		

It is interesting to note that before the children's ward was built, and during a period when the need for beds was at high pressure, the main corridor, owing to its ample width, was converted into emergency wards by means of the temporary cross partitions or bulkheads, which you will note still stand, but, happily for the peace of mind of the architect, he hears, are shortly to be dispensed with.

The corridor provided temporary accommodation for twelve beds, and would do so again

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Mr. A. Saxon Snell, F.R.I.B.A., Architect.

in case of emergency such as a railway or tram-car accident.

Now, with reference to future possible requirements, the three main wards, as previously stated, are so designed and constructed as to provide by overhead duplication and ground-floor and first-floor extension an addition of 110 beds if required, and not at all necessarily at one time; in fact, the extensions could be well carried out in two, four, or six stages at different and extended dates.

The new administration block provides sleeping accommodation for the cook (an important personage in all institutions) and sixteen ward and kitchen maids. When the time comes, not far distant, it is hoped, and the Nurses' Home block rises adjacent to the Out-Patients' Department, on the main road, similar in elevation and balancing the administration block, as you will note, and as shown in the drawing on your right, the Old Cottage Hospital will disappear and give place to an open frontage on the south and the proposed future ward extensions. The nurses' block will supply the urgently-needed quarters for the Matron, Sisters, nurses, and probationers now billeted out in adjacent cottages to their patiently-borne discomfort and contrary to the best working of the institution.

Design.

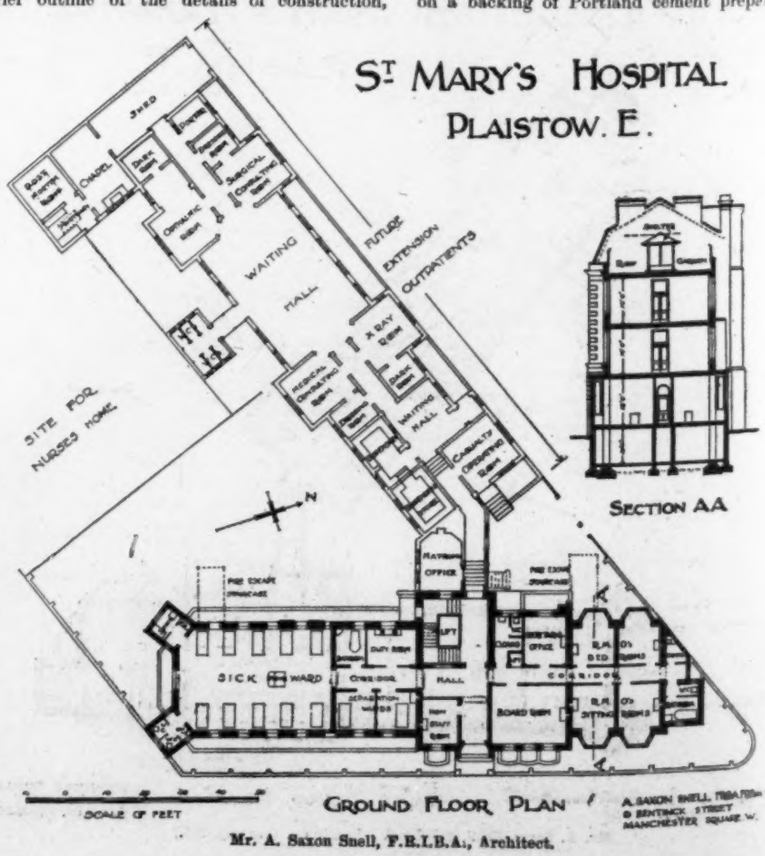
The plan is arranged on the pavilion system, the wards being on the south and connected with the main corridor which runs the entire length of the buildings. On the north are arranged the administrative rooms, the kitchens, isolation wards, and the proposed new operation theatre, and at either end corridors branch at right angles, giving access to the Out-Patients' Department and the Gardiner Memorial Separation Wards.

In section all the wards are built on open arches, so that the main floor is some 6 ft. above the level of the ground, a form of construction which, though expensive, gives the undoubted advantages of raising the building to a purer stratum of fresh air, invites increased sunshine, and provides a continuous current of air underneath, as well as around and over the wards.

The elevations are kept generally as plain and inexpensive as possible, the exceptions being the ward balcony arcades and the new entrance front, which have been simply treated in Portland stone and rubbed brickwork in the Classical style of architecture. A special feature of the plan is that of the main ward balconies, for, while sheltered by the ward ends, sanitary towers, and connecting passages, they are open to the south, thus forming veritable "sun-baths." I am told the patients like to sleep out in them, even at night and in the winter, and the men long for a balcony bed, as they are permitted there to indulge in a pipe or cigarette!

Details of Construction.

I do not propose to give you more than a brief outline of the details of construction, which, when once agreed and settled, have been, almost without exception, faithfully carried out from date to date and block to block. The floors are all fireproof, some by Messrs. Homan & Rodgers, others by Mr. Mark Fawcett, at first tubular and more recently of Monlith-crete, and finished with Diespeker's marble terrazzo, as it is called, or venetian mosaic. The walls are lined with glazed bricks in the corridors and sanitary towers, and the remainder of the walls and ceilings are of Keene's cement on a backing of Portland cement prepered at

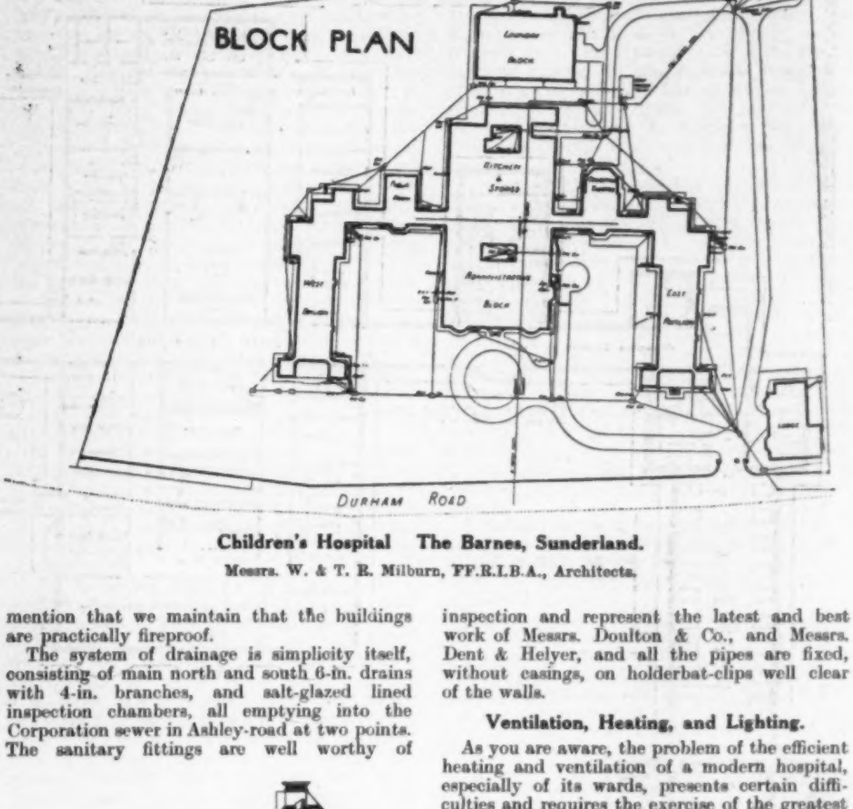


Mr. A. Saxon Snell, F.R.I.B.A., Architect.

FIRST FLOOR PLAN

Children's Hospital: The Barnes, Sunderland.

Messrs. W. & T. R. Milburn, FF.R.I.B.A., Architects.



Children's Hospital The Barnes, Sunderland.

Messrs. W. & T. R. Milburn, FF.R.I.B.A., Architects.

first for Hall's distemper, and in a few years' time to be finished with Ripolin or other enamel paint. Rounded angles obtain everywhere, almost without exception, and as hydrants and hose are provided throughout it is clear that the very necessary hosing down for cleaning purposes can be very frequently carried out with great ease. In this connection I would mention that we maintain that the buildings are practically fireproof.

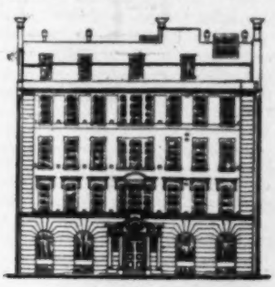
The system of drainage is simplicity itself, consisting of main north and south 6-in. drains with 4-in. branches, and salt-glazed lined inspection chambers, all emptying into the Corporation sewer in Ashley-road at two points. The sanitary fittings are well worthy of inspection and represent the latest and best work of Messrs. Doulton & Co., and Messrs. Dent & Helyer, and all the pipes are fixed, without casings, on holderbat-clips well clear of the walls.

Ventilation, Heating, and Lighting.

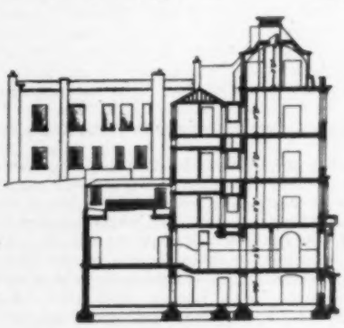
As you are aware, the problem of the efficient heating and ventilation of a modern hospital, especially of its wards, presents certain difficulties and requires the exercise of the greatest care and thought, together with elaborate calculations, to obtain success, and when you see the wards I think you will agree that we have achieved a large measure of success as judged by the results. The regulated heating of fresh air drawn in from the outside and natural ventilation obtained by means of regulating fanlight hoppers at the ceiling level is both simple and effective. The central air of the large wards is heated by Doulton's double fireplace stoves without any central vertical flue (an abomination, to my mind), the smoke and air inlet flues being carried under the floors and up the side walls to the chimney-stacks. Messrs. Henry Hope & Sons, of Birmingham, are responsible for the efficient heating of the whole building, which is on the low-pressure system, and dispenses with the necessity of night-stoking. You will note that the wards and isolation blocks are separated from the main corridor and the sanitary towers from the wards by means of cross-ventilated "cut-off" lobbies, so that there is no possibility of vitiated air entering the wards, and I venture to think that the keenest nose will fail to detect any atmosphere that is not absolutely clean and sweet.

The lighting is entirely by electricity, and electrical power current is conveyed from a dynamo to the electrical department and the operation theatres.

I would like to mention the excellent work of the contractors, Messrs. Miller & Sons, McWilliam & Son, and Jenkins & Sons.

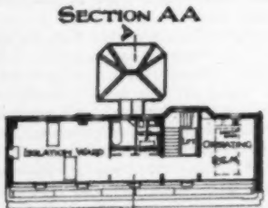


ELEVATION TO DEAN STREET

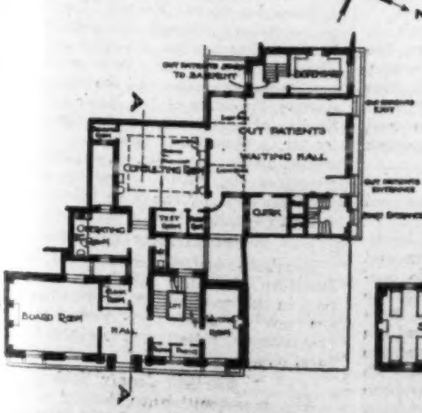


SECTION AA

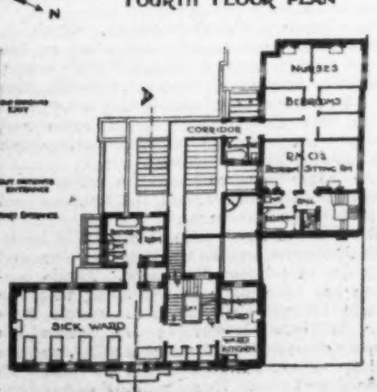
MALE LOCK HOSPITAL DEAN STREET. W.



FOURTH FLOOR PLAN



GROUND FLOOR PLAN



FIRST FLOOR PLAN

A. SAXON SNELL, F.R.I.B.A.
9 BENTINCK STREET
MANCHESTER SQUARE, W.

Mr. A. Saxon Snell, F.R.I.B.A., Architect.

ST. MARY'S HOSPITAL, PLAISTOW:

HOSPITAL FOR WOMEN AND CHILDREN.

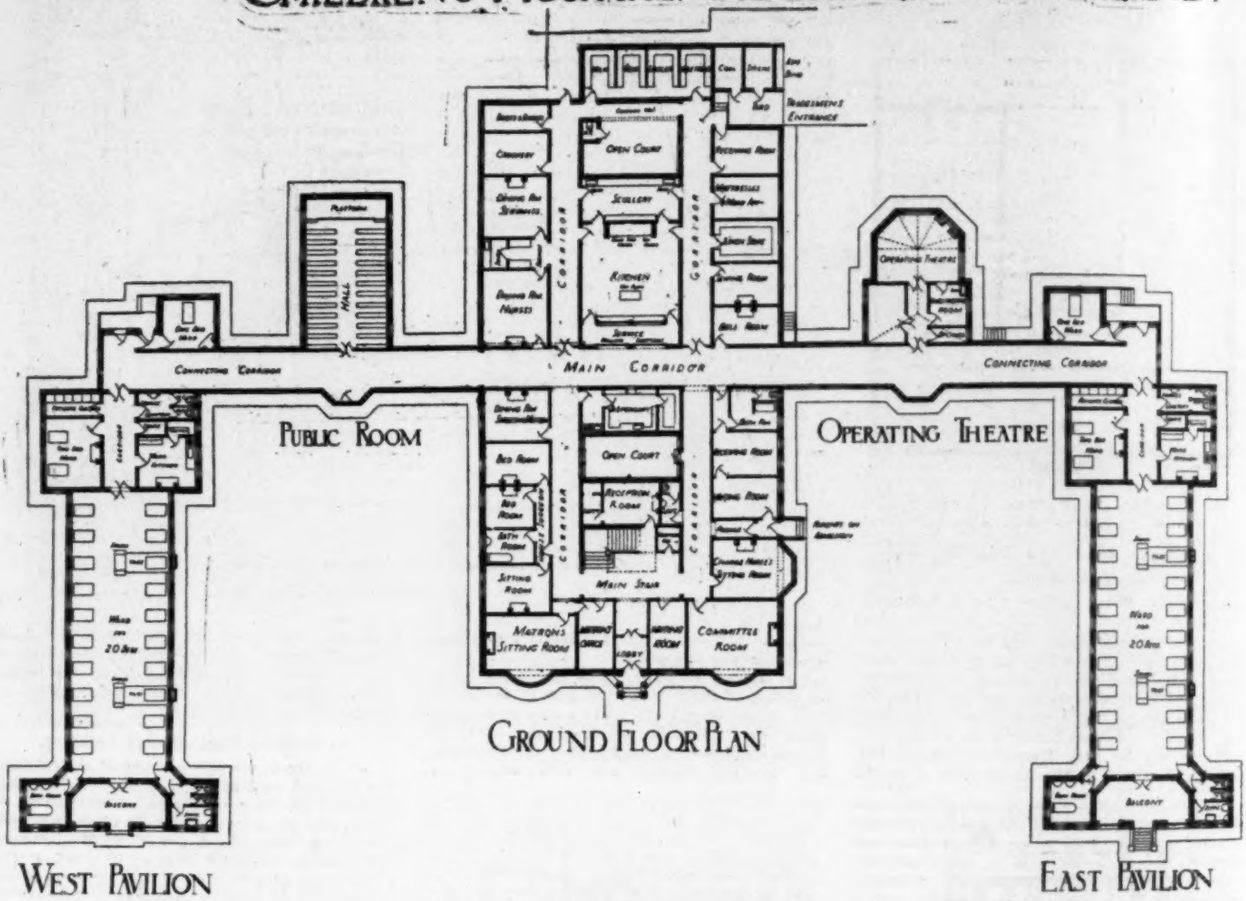
THE new Ward Block is built on the vacant site opposite the old hospital. It has a basement and ground floor, with two stories above, a portion of which is carried up to a third story.

The new block contains storerooms in the basement.

The main entrance from the public main road leads to the entrance-hall, with the staircase beyond it.

On the east side of the hall are the Board-room, Secretary's office, cloakroom, and quarters for two resident medical officers.

CHILDREN'S HOSPITAL, THE BARNES, SUNDERLAND.



Messrs. W. & T. R. Milburn, FF.R.I.B.A., Architects

On the west side there is a ward for ten women and two separation wards, each for one bed, with duty and bath rooms; also honorary staff waiting-room.

The first and second floors are identical in plan and arrangement, except that the separation wards on the second floor have been temporarily fitted for and used as operating-room, anæsthetic and sink room.

The wards comprise:—Two for sixteen beds each, two for six beds each.

There is a separation ward for two beds and two for one bed each; bathroom, ward kitchens, linen-room, etc.

On the top floor there is a general kitchen, with its stores and scullery adjoining. It communicates with all floors by means of a special hand-lift.

An automatic control electric bed lift is placed in the well-hole of the stairs and connects all floors.

The roof over the wards is flat, covered with asphalt and laid out with seats, shrubs, and glazed shelters. It is used as an airing-room and playground for children.

An additional block of buildings, to contain the Out-Patients' Department, isolation wards, and permanent operating theatre, will be erected on the site, as shown on the plan, as soon as funds will permit, and a Nurses' Home will also be built.

The building was carried out by Messrs. F. & E. Davey, of Southend-on-Sea, at a cost of £15,240.

The engineering work was carried out by Messrs. Wenham & Waters, of Croydon.

The electric light, etc., was carried out by Messrs. Cash & Co.

The architect is Mr. Alfred Saxon Snell, F.R.I.B.A., F.R.San.I.

MALE LOCK HOSPITAL, DEAN-STREET, SOHO, W.

THE original hospital was formed out of some old premises in Dean-street, on the present site of the Ward Block. Four cottages were subsequently secured in Diadem-court and added to the site. These cottages were demolished and the Out-Patients' Department was erected in 1911. Thereafter the old hospital was pulled down and the Ward Block erected. This was opened in the latter part of 1913.

It will be observed that the site is narrow and restricted, and in designing the building the question of ancient lights had to be carefully considered. As a further illustration of the difficulties, it may be mentioned that no less than seventeen Party Wall Notices were served and dealt with.

The Ward Block contains beds for thirty-three patients in three units on the first, second, and third floors, and an additional six in a special ward on the fourth floor. Each unit comprises a ward for ten beds—separation ward, duty-room, and sanitary annexe.

An operating-room is provided on the fourth floor. The ground floor is devoted to the entrance hall, consulting and Board rooms, and the basement to boiler-room, coal and other stores.

An electric lift, with automatic control, connects all floors.

The Out-Patients' Department, which is entered from Diadem-court, comprises, on the ground floor, a large waiting-hall (120 seats), dispensary and double consulting-rooms, also a small operating-room and testing laboratory.

The basement contains douche-room and conveniences, also an officers' sitting-room and bacteriological laboratory.

The upper floor contains the officers' and nurses' (male) quarters, and the kitchens and rooms for female servants.

The walls of the building are built in brickwork in cement, and the whole of the floors and roofs are of reinforced concrete. Ample provision has been made in complying with the County Council Regulations for escape from fire. All internal surfaces are finished in Keene's cement painted and enamelled, and the sanitary offices, bathrooms, etc., are lined with white glazed tiles. Every precaution has been taken in the shape of rounded angles and hard surfaces, etc., to secure and maintain absolute cleanliness in all parts, which is more than usually needed in a hospital of this kind.

The ward floors are covered with thick linoleum cemented to the concrete surface under.

The Out-Patients' Department was carried out by Messrs. W. & J. Fryer, at a cost of £7,885, the heating and hot and cold water services by Messrs. Wenham & Waters, electrical work by Messrs. Fryer & Co., kitchen fittings by Messrs. Slater & Co., and the tiling and terrazzo by Messrs. Simpson & Sons.

The Ward Block was carried out by Messrs. Dove Brothers, at a cost of about £11,000, the engineering work by Messrs. Benham & Co., electrical work by Messrs. Fryer & Co., and tiling, etc., by Messrs. Simpson & Sons; the floor and walls of the operating-room by Messrs. Diespeker & Co. The architect is Mr. Alfred Saxon Snell, F.R.I.B.A., F.R.San.I.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current Competitions is printed on page 278.

Branch Libraries for Derby.

Plans for the two Branch Libraries which are to be erected through the munificence of the Carnegie Trust in the Alvaston and Normanton districts of Derby have been selected. Eleven architects sent plans, and the assessor, Mr. E. R. Sutton, President of the Notts and Derbyshire Society of Architects, selected the plans sent in by Mr. Arthur Eaton, architect, of St. James's-street, Derby, and Mr. C. B. Sherwin, of St. Peter's-street, Derby. These two sets of plans were adopted by the Free Library Committee and submitted to the Carnegie Board.

The Barnsley Town Hall.

Members and Licentiates of the Royal Institute of British Architects must not take part in this competition, because the conditions are not in accordance with the published Regulations of the Royal Institute for architectural competitions.

Mill Hill County School.

Any members of the Society of Architects who have been invited by the Hendon Education Committee to take part in this competition are requested not to do so without first ascertaining from the Secretary whether the conditions are such as can be approved by the Society.

ARCHITECTURAL SOCIETIES.

The Royal Institute of the Architects of Ireland: President's Address.

A general meeting of this Institute was held on the 19th inst. at No. 31, South Frederick-street, Dublin. The President, Mr. R. Caulfeild Orpen, B.A., R.H.A., occupied the chair. There were also present:—Messrs. A. E. Murray, J. H. Webb, G. L. O'Connor, P. J. Lynch, W. A. Scott, L. O'Callaghan, J. Holloway, P. L. Dickinson, and F. G. Hicks, Hon. Secretary. The minutes of the previous meeting were read and signed. The President read his inaugural address, in the course of which he said:—

"I hope you will not ask me at the outset what this "Inaugural Address"—an absurdly grandiloquent term—deals with. Indeed, any interest it may have might be increased by the offer of a prize at the close for the best suggestion for a title! May I call it "Random Thoughts"—some of those "visions of my head" which trouble me as they did Nebuchadnezzar long ago?

If we picture to ourselves the earliest man, alone among primeval woods, differentiating between the palatable and unpalatable berries on which he browses, finding the light sweet and beholding the sun a pleasant thing, judging grey skies and biting frosts inimical and to be shunned wherever possible, we find him forming his own individual judgments and modifying these as his experience dictates.

Very soon indeed in the world's history it was recognised that it was "not good that man should be alone," and the community arose, limiting man's right of forming individual judgments (or, at least, of unduly forcing the acceptance of such on others), and forming laws governing action for the protection of the many from the aggression of the few.

Man in his dealings with man found it necessary to distinguish the truthful from the untrustworthy, the honest from the dishonest. If his neighbour's store of berries ran out, and he had supplied him with a cluster of black Hamburg, he did so on the understanding that the borrower would not restore the loan by offering him a bunch of Findlater's 6d. a pound. American green, gritty with sawdust!

In order to form a basis for such laws it was necessary to arrive at decisions as to the beneficial effect, or the reverse, of action on the well-being of the community; thus some courses of action were deemed beneficial or good, others inimical or bad in themselves, but are only so in so far as they affect the welfare of the community, or the reverse.

As the composition of the community became more and more complex, so its judgments and laws enforcing these extended more and more in the direction of limiting, if not altogether suppressing, individual action outside the boundaries of its creed.

Singularity has always been deemed dangerous in social life. Man finds safety in acquiescence; and only the few, and greatly daring, venture to be singular by declining to have their hair cut periodically or to drop the final "e" in the present participle!

In the flux of time society has found it necessary to readjust its outlook in regard to certain moral questions; and while, as I believe, human nature essentially varies very little through the ages, the local societies into which it gathers, be these nations or sects, outwardly vary their attitude towards the moral aspect of life.

The contention I am anxious to establish is this—that good or bad, either in morals or art, are merely relative terms. That society in its own interest, in various places and at various times, modifies its judgments in regard to certain actions, labelling them as "good" or "bad" in so far as these actions are judged beneficial or inimical to the community.

Society has always discouraged the exercise of individual judgment when translated into action, until it has time to consider the effect of such action on its interests.

Whenever a man asserts his assumed right to form an individual judgment at variance with the existing code of laws which govern the community to which he belongs, and proceeds to take action in accordance with the judgment he has arrived at, he is called a "poser," or a "crank," or a "revolutionary," and suffers contempt, toleration, or extinction. But when, should it so happen, he has converted the majority to his point of view, then that point of view is called "public opinion," and at once becomes a law of the community.

As an illustration of the mutability of these laws of society, we may take that which deals with fashion in dress. These laws are universal. We see their influence in decreeing that a lady's value in the matrimonial market shall be fixed by the number of brass rings which her throat can carry, even though she emulate the giraffe; we see their influence in tiger-skin wraps and hobble skirts. We have fashion in the trimming of horses' tails, in winter sports and society dances. The laws of fashion are as relentless as those of the Medes and Persians.

What we in the present day suffer most from is the extraordinary rapidity with which all fashion changes owing to the simplified intercourse of nations and the cosmopolitan nature of our cities. In earlier times fashion was more stable. I fancy a nice taste in dyeing the body with woad held its own for a decade or two among the fastnesses of Cullen's Wood. Now Upper Rathmines has hardly had time to learn the Tango before it has been pronounced *démodé*—a mad world indeed, my masters!

But what has all this to do with architecture? you may reasonably ask. Much, I assert. The architectural taste of our time is chaotic owing to fashion's ever-changing decrees.

It is popularly supposed that the annual fashion in ladies' dress is formulated in Paris in the atelier of some accepted professor of sartorial art, but who can trace the origin of fashion in architecture? Who can check its overwhelming advance or modify its absurdities?

We, to whom architectural education is a matter of deep concern; we older men, who are supposed to be able to take a broad view of the general conditions which govern our art, what are we to say to students in regard to this question of "style" in design?

It seems that our advice should be, "Study the fashion in design of to-day with an eye on to-morrow's developments; avoid, as you value your professional reputation, outraging the canons of fashion your country and time have decreed, and—Heaven forgive you—you will float on the full tide of popular success."

"Gracious!" exclaims the scandalised student—one who has adopted the creed of Liverpool and sat at the feet of that most attractive, personating, and compelling enthusiast, my friend Professor Reilly—"Gracious!" The student will probably decline to carry an unfruitful conversation further, but should he deem me worthy of his indulgence, I can fancy him asserting "there is only one style, which, in its purity and logic, can be adapted to all conditions of architectural design, and that is the Neo-Grec."

I am afraid the interview is over.

This student, I respect him and envy the peace of mind the whole-hearted acceptance of a creed brings, will invariably refer to a period, which to some of us is comparatively recent, as that of "the now universally discredited Neo-Gothic."

We—and there are several among us here to-night—who served a long apprenticeship in this "discredited" school, cannot but feel pained by this crude condemnation of the educational efforts of our masters. Undoubtedly the "Gothic period discovered many architects of mediocre skill, as every period of history has done—many who were merely slavish "adapters" often ill-equipped by study. The world went mad and clamoured for turrets and gables, crockets and gargoyles, and our offices produced these *ad nauseam*. But it was because, as is always the case, the true exponents of the Gothic spirit were few and often neglected, and the false and vulgar professors of a fluent style were blatant and many, that the movement became discredited. We, who know the patient study and scholarship brought to their art by such men as Sharpe and Street, Burges, Sedding, and my old master, Drew, will, I fancy, continue to resent the repetition of the expression, "Universally discredited Neo-Gothic."

I used just now the word "fluent" in connection with the use of the Gothic style. It was undoubtedly this fluency which compassed its discredit.

In our student days (happily for all of us still incomplete) we filled our sketch-books with records of old English homes—Elizabethan Jacobean, and the rest—revelling in the picturesque grouping of dormers and gables, oriels and turrets. With our colour-boxes we noted the charming effect of tiled roof and black timber gable framing; of widely-gabled roomy brick chimney-stacks, russet and grey and lichen encrusted, all added picturesqueness that came from periodic extensions of these ancient homes, all the accidental effects of inserted windows and clinging creepers, and through over-indulgence in this riot of beauty we went mad. Look at the work of the leaders of these schools in the domestic work they produced, and note how the affectation of the picturesque obsessed them, how tortuous the planning to break up the masses of the elevation—how illogical it all was, how childish, how futile!

Then came the jerry-builder with his bastard Gothic suburban terrace house, and finally discredited the only typical style of architecture our country possesses. It was this craze for the picturesque—a Kate Greenaway kind of picturesqueness—which distinguished the last quarter of the nineteenth century. We, sketchers of English domestic Gothic work, were "out for" the picturesque, such as our taste recognised, and we seem to have failed how logical and straightforward the planning of these old English homes really was: how, in their dignified arrangement of apartments and unaffected external treatment, they offered as splendid examples of sane and practical architecture. The keynote of their design was that which is the true test of all art—honesty and sincerity.

I fear any words of mine in feeble defence of our predecessors, to whom the study of our English Gothic in all its periods meant so much, will meet with little sympathy from the pioneers of to-day.

There is one broad lesson to be learnt from the overthrow of these champions, and I should like to enforce it to-night. I think the lesson is this—that the passing of the vogue our masters represented was not the result of any inherent unsoundness in the principles of design they professed to advocate, but the result of their applying themselves almost exclusively to the task of mastering the intricacies of detail, detail of constantly changing variety, and of giving too little attention to the great principles which underlie the spirit of Gothic design. Archæology strangled architecture during the Neo-Gothic period.

None of us can confidently predict the direction which, for want of a better term, what we may call fashion in architectural style will take, and, though the prophetic mantle, lightly assumed, frequently becomes burdensome under the fierce light of unexpected revelation, I look forward to a period—not in the very distant future—when we shall see a revival of the "discredited" Neo-Gothic, no longer characterised by a pedantic fumbling over the distinction between mouldings of "late" and "early" decorated, or engrossed in the study of the development of the crocket, but based on a true appreciation of the essential spirit of the style.

One such as I am, who served his apprenticeship in the Gothic school, is saddened and shocked when he meets the work of many modern architects essaying the Gothic style, either the actual buildings or their illustrations, and sees how perfunctory has been the training of the designers, how little evidence their work shows of study of the spirit of the style they exploit or of the detail they attempt to adopt.

I was refreshed and uplifted when last year, on the excursion of our own Architectural Association, I visited Liverpool Cathedral and saw, for the first time, the completed Lady Chapel. The old spirit of the Goth in me rejoiced. Here I found in, to my mind, quite amazing beauty traditional scholarship refining and curbing a splendid conception; freshness and vigour of detail always modern and suggestive, but decorous and true to the spirit of the style. No stammering statement this, but a splendid paean of praise in stone by an accomplished architect and master of his craft.

I hope I have said enough to emphasise my contention that to condemn the study of English ecclesiastical or domestic Gothic work is both foolish and unjust."

A vote of thanks was proposed by Mr. P. J. Lynch. He said they had the pleasure of listening to an address which had broken new ground and was full of suggestive thought. He was glad to hear such a temperate protest against the wholesale condemnation, so prevalent nowadays, of the work of the Gothic revivalists.

Mr. F. G. Hicks, in seconding, said the

President's address reminded him of his water-colour work—both exhibited great colour charm.

Mr. Lynch called attention to the Royal Commission which is now being held in Great Britain with the object of recording and preserving remains of architectural and antiquarian interest in the country, and suggested that the Institute should identify itself with a movement to obtain similar facilities in Ireland. It was agreed that a letter be drafted and considered by the Council.

The President announced the postponement of the annual dinner until March 5.

The Birmingham Architectural Society: The Life and Work of Mr. G. F. Bodley, R.A.

At the ninth general meeting, held on the 20th inst., the President, Mr. G. Salway Nichol, in the chair, Mr. E. P. Warren, F.S.A., F.R.I.B.A., delivered a lecture on "The Life and Work of Mr. G. F. Bodley, R.A.," illustrated with lantern slides showing some of the numerous and magnificent examples of ecclesiastical buildings carried out either by Mr. Bodley himself or in conjunction with his one-time partner, Mr. Thomas Garner. The lecturer said that Mr. Bodley's work might be divided into three stages—the initial period, when he worked by himself; the collaborative period, when he was joined by Mr. Garner; and, lastly, when he was again working without a partner; but the buildings erected during the whole period of professional activity were characterised by that feeling of suave severity in the production of which Mr. Bodley proved himself to be a past-master. Mr. Bodley was an idealist, and throughout his long architectural career, even in the smallest work entrusted to his care he never failed to produce examples which clearly indicated the fine conception which he set out to accomplish. It has been sometimes said that Mr. Bodley was a copyist, but nothing could be further from the truth. The lecturer, being an old pupil, could abundantly testify that Mr. Bodley, although a keen student of old work, seldom made sketches or notes, relying almost solely upon his memory of ancient examples for any general scheme or detail which he might desire to embody in his work. His library of architectural books was of the meagrest. What Mr. Bodley did do was to absorb to himself the spirit of what was best in Gothic architecture and apply it to modern buildings and requirements.

As was pointed out by Mr. Hobbiss, when supporting the vote of thanks, Mr. Bodley may almost be considered to have out-Gothiced the Gothics, for he carried forward their traditions to a greater height than had hitherto been attempted or accomplished. His principal vogue bore many characteristics of Gothic work of the early fourteenth century. The Midland Counties are fortunately very rich in Mr. Bodley's work, and, in the lecturer's opinion, probably one of the finest examples to be found was that of the church at Hoar Cross, in Staffordshire, situated amidst the ideal sylvan surroundings of what remains of the ancient forest of Needwood. It was considered that Mr. Bodley's work had produced a vast influence on modern architects and architecture.

The lecturer concluded by giving an appreciative survey of Mr. Bodley's life and personality. One story concerning his ready wit is too capital to overlook. A pupil, in his youthful superiority and lack of respect for all mankind, including his master, once observed on being shown a sketch for a lectern: "Oh, I know where you obtained the idea of that from; it is in such-and-such a book!" Mr. Bodley's unruffled retort was: "The ass knoweth his master's crib!" A vote of thanks to the lecturer was proposed by Mr. C. E. Bateman, seconded by Mr. W. Doubleday, and supported by Messrs. J. E. Swann and Holland W. Hobbiss.

Leeds and Yorkshire Architectural Society: Town Planning.

A general meeting of this Society was held on the 19th inst. at the Leeds Institute, Cookridge-street. In the absence of the President and Vice-President, Mr. W. H. Thorp, F.R.I.B.A., occupied the chair.

Mr. Patrick Abercrombie, M.A. (Liverpool), gave a lecture on "The Architect's Sphere in Town Planning, Past and Present," illustrated with lantern slides. The lecture covered a large ground, practically showing the whole development of town planning, and dealing with the component parts of the problem from the æsthetic, the traffic, and the sociologistic points of view. The paper was largely an attack upon architects for not interesting themselves sufficiently in matters of town planning of the present day. Mr. Abercrombie concluded his lecture with a comparative diagram showing the density and disposition of English towns, continental towns, the modern garden city, and a suggestion for the future development of cities. The latter showed concentration of the centres for commercial purposes by the use of skyscrapers, so obtaining quicker transport into the outlying country in which were distributed the houses, the works, and the manufacturers also being concentrated in another locality. The discussion which followed largely centred around the last proposition, and a vote of thanks to the lecturer was heartily accorded on the motion of the Hon. Secretary, Mr. W. Whitehead, A.R.I.B.A., and seconded by Mr. J. H. Foggitt, A.R.C.A., A.R.I.B.A.

Nottingham and Derby Architectural Society.

At a meeting of this Society on Tuesday last week the President announced that they had been able to arrange a lecture on "Town Planning," by Professor Adshead, of Liverpool, on March 10. The Mayor had kindly promised to preside, and anyone interested in this subject would be admitted by ticket free of charge.

Mr. E. H. Heazell, Licentiate of the Royal Institute, then delivered a lecture on "A Tour in Provence," describing particularly the historical and architectural features of the towns in the Valley of the Rhone from Lyons to the sea, and showing by lantern views the superb remains of the Roman occupation of this district, including the fortress-palace at Avignon, built and occupied by the Popes from 1309 to 1377, but degraded by being used until recently as a barracks. The Romanesque church and the fifteenth-century Castle of Tarascon, the Græco-Roman theatre at Arles, and the unique cloisters of the church of St. Trophime in the same city, and the Roman amphitheatre at Arles, 450 ft. in length, and the one at Nîmes, only slightly less in size, still magnificent monuments, though not to be compared in size with the Coliseum at Rome.

Views were also shown of the Maison Carrée at Nîmes, the finest and best preserved Roman temple extant, the ruined temple of Diana or Nemausus, and the Roman baths adjoining, which were incorporated in a wonderful Italian garden in the eighteenth century, and which now form one of the most delightful public gardens in provincial France.

The lecture concluded with a description of the well-preserved triumphal arch at Orange and the mighty aqueduct known as the Pont du Gard, carrying the water supply from the hills over the Valley of the Rhone, which is still used, though probably built by the Romans before the Christian era.

Professor Granger, D.Litt., proposed a vote of thanks to the lecturer for his interesting lecture and views, and Mr. Robert Evans, F.R.I.B.A., seconded.

GENERAL NEWS.

The Architectural Association.

An exhibition of educational cinematograph films specially prepared by Messrs. Ruffell's Exclusives, Ltd., under the direction of the Architectural Association for use in architectural and technical schools, will be given in the rooms of the Architectural Association at No. 18, Tufton-street, Westminster, on Friday, March 6. Tickets may be obtained from the Secretary of the Association.

Royal Academy Exhibition, 1914.

Intending exhibitors are asked to note that days for receiving works are as follows:—Water-colours, pastels, miniatures, black-and-white drawings, engravings, and architectural drawings—Friday, March 27; oil paintings—Saturday, March 28, and Monday, March 30; sculpture, on Tuesday, March 31. Labels and forms can be obtained, during March only, from the Royal Academy.

The Local Government Board and Tuberculosis Hospitals.

The Local Government Board have issued a circular drawn up by their architect, Mr. Brook Kitchin, and their Medical Officer, Dr. Newsholme, to County and County Borough Councils relative to the economical provision of permanent residential institutions for the treatment of pulmonary tuberculosis. The unit adopted in the circular is one hundred beds in buildings, with ten in shelters. The authorities recommend that a sanatorium site should be big enough for the employment of many of the patients out of doors—say, 50 acres for one hundred patients; in all cases at least ½ acre should be allowed per patient. Nine drawings, with hints for planning, are appended. The floor space should give at least 64 sq. ft. to each patient; their rooms should be not less than 8 ft. 6 in. high and the wards higher. It will be commonly unnecessary, the circular observes, to heat the patients' quarters, the dining hall and some of the special nursing-rooms excepted, whilst a low-pressure hot-water system will prove the most economical, and the adoption, where possible, of electrical lighting is recommended. It is suggested, further, that in view of the importance of the continuous open-air treatment it is unwise to encourage patients to collect in a recreation-room, unless upon special occasions or for a very limited while.

Royal Academy Professorship of Perspective.

The Royal Academy have appointed Mr. G. A. Storey, A.R.A., to the Professorship of Perspective, which has remained vacant during many years past. Mr. Storey was appointed Teacher of Perspective in the Royal Academy Schools in 1900, and Examiner in Drawing, Board of Education, a few months ago; he is the author of "Theory and Practice of Perspective."

St. Giles's, Cripplegate, Chest.

In response to representations made by the Bishop of London and others, the executors of the late Vicar have relinquished their project to sell by auction an old oaken chest, on the lid panel of which is a picture of the old City Gate, executed in marquetry inlay, with an inscription:—"St. Giles's. Ts Bourne Wm. Rawlinson, Sl. Grisold, Ar Ginn, Churchwardens, 1729." The chest is 35 in. wide, and is bound with iron and covered with brass studs; it is conjectured that the chest originally belonged to St. Giles's. The executors have, we learn, presented the chest to the churchwardens.

Captain Scott Memorials.

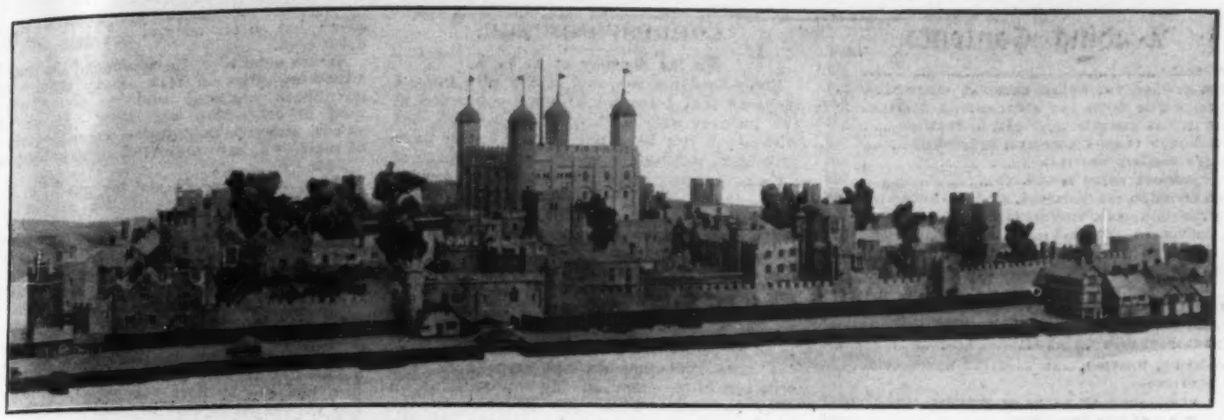
Sir Edgar Speyer, Sir Thomas Brock, R.A., the Hon. Harry Lawson, M.P., and Mr. Lionel Earle, Secretary, H.M.'s Office of Works, have been appointed as a Sub-Committee to make provision for the erection in London of suitable memorials to Captain Scott and his companions. The Dean and Chapter of St. Paul's have assigned space, on the pier near the door to the crypt, for a mural bronze tablet, to be designed by Mr. S. Nicholson Babb, and invitations are addressed to six leading sculptors to submit designs for the outdoor memorial, for which £7,500 is set apart out of the fund.

The Greek Theatre, Syracuse.

On April 16-19 the "Agamemnon" of Æschylus will be performed in the ancient Greek theatre which was built, reputedly, by Democopor Myrilla, the architect, for Hieron I., in or about 450 B.C. The theatre is nearly 140 yds. in diameter, and retains the greater part of the seats that were fashioned out of the rock on the hillside, together with vestiges of the altar of Dionysus in the orchestra.

Church Building Society.

The Incorporated Church Building Society held its usual monthly meeting on the 19th inst. at the Society's House, No. 7, Dean's-yard, Westminster Abbey, S.W., the Hon. Sir Edward Thesiger, K.C.B., in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Copnor, St. Cuthbert, Hants, £250; Coulsdon, St. Andrew, Surrey, £125, for the first portion; East Sheen, All Saints, Surrey, £150; Grimsby, St. Stephen, £200, for the first portion; and Potter's Bar, St. John, Middlesex, £125, for the first portion; and towards enlarging or otherwise improving the accommodation in the churches at Canton, St. Luke, Cardiff, £50; Kilsby, St. Faith, near Rugby, £5; Llansamlet, S. Samlet, Glam, £15; Load St. Mary, Christ Church, Somerset, £10; Salisbury, St. Mark, £75; and Spreyton, St. Michael, Devon, £5. Grants were also made from the Special Mission Buildings Fund towards mission churches at Polruan, St. Saviour, Lanteglos-by-Fowey,



Model of the Tower of London as it appeared A.D. 1600.

By Mr. John B. Thorp.

This model, which is being presented to the London Museum, Stafford House, by Mr. J. G. Joicey, has been made by Mr. Thorp to a scale of one-hundredth full size and covers an area of nearly 150 sq. ft.

Cornwall, £5; and Squirrels Heath, All Saints, Romford, Essex, £25. The following grants were also paid for works completed:—Lower Halstow, St. Margaret, Kent, £10; Lambeth, St. Philip, Surrey, £50; Hambledon, St. Peter, Surrey, £10; Brough, St. John, Yorks, £50; Swansea, Christ Church, £100; Low Moor, St. Mark, Yorks, £30; Cresswell, St. Mary Magdalene, Notts, £75; and Seal, St. Peter, Kent, £40. In addition to this the sum of £280 was paid towards the repairs of seventeen churches from trust funds held by the Society.

The Tower of London A.D. 1600.

Mr. John B. Thorp's models of Old London are becoming so well known that it is not surprising to find further additions being made from time to time. The new model, which is being presented to the London Museum by Mr. J. G. Joicey, has been built to a scale of one-hundredth full size, and covers an area of nearly 150 sq. ft. It will be first seen by the public when the Museum is opened in the early spring at its new quarters at Stafford House. The Tower, in the days of the early part of the seventeenth century, was still used as a royal residence; and in the model the various buildings which occupied most of the space between the White Tower and the wall facing the river, and were known as the Queen's Gallery, the Queen's Lodgings, the Jewel House, and the remains of the Great Hall, are all shown, also, of course, the moat, with its stagnant water, is surrounding the outer walls. On the north bank of the moat there still remained a portion of the City wall, with a postern gate, showing how William the Conqueror, by removing a portion of the wall, was able to make his fortress partly within and partly without the City. There is also shown the circular menagerie, which stood just outside the Middle Tower, and was built to cage wild beasts that at various times were presented to royalty; and a cluster of warehouses and Tudor houses standing at the east end of the wharf on the river's edge gives the Tower a picturesque appearance. Now, although the main outline of the Tower is little altered from what it was in the Middle Ages, the smaller buildings have mostly all gone, but in this model of Mr. Thorp's a most excellent idea can be gained of what the grim fortress appeared like hundreds of years ago.

St. Bartholomew-the-Great, West Smithfield.

Mr. E. A. Webb, Rector's Warden, of No. 60, Bartholomew-close, E.C., recently invited subscriptions for erecting a memorial in the church to Benjamin Franklin, by way of a tablet, and some figures of female saints, for the five canopied niches in the east wall of the present Lady Chapel. Franklin relates that in 1725 he got work at Samuel Palmer, the printer's, in Bartholomew-close, with whom he remained during twelve months. It is ascertained from the rate books and other sources that Palmer and John James, the typefounder cited by Franklin, worked in the old Lady Chapel of the church, which, when the Priory was sold to Sir Richard Rich in 1539, was converted into a dwelling-house, having three floors, and subsequently into the fringe factory which was acquired thirty years ago and restored in 1897. Along the south side of the chapel lay—in the later Middlesex-passage—the Canons' burial ground. There is a view in Woolaston's "Religion of Nature" (1720) of the upper floor of the old building fitted with the compositors' racks that remained there to our own time.

The Prison of the Temple, Paris.

Nearly two years ago M. Pierre Sardou built for the City of Paris the École Maternelle upon the site of the old fortress and prison which, in the thirteenth century, formed one of the two Commanderies in Paris of the Knights Templar, whose order, in 1312, was so cruelly dispersed under Philip de Valois; the Temple was then bestowed upon the Knights of St. John. Much of the buildings were extant in the middle of the eighteenth century, with the curtain walls and their four angle-towers; the church was round and like to that in London. The Temple was the prison of Louis XVI., his Queen, and their three children. In 1814 Louis XVIII. gave the Hôtel of the Grand Prior to the Princess de Conti for a convent of Benedictine nuns, which remained until 1848, when two acres of the garden site were taken for the Marché du Temple—the (old) Monmouth-street of Paris, since reconstructed and much improved. A marble tablet has just been placed on the exterior wall of the School, at the corner of the rues Dupetit-Thouars and Gabriel-Vicaire, bearing an inscription, with a plan of the precincts of the Temple and the Quartier des Enfants Rouges, as in 1793. In the square were set up the statue of Béranger, by Doublemard, Noel's "Retiarius," and Schæneweck's "Age sans Pitié."

The Claims of Antiquity.

Presiding at a meeting for the purpose of enlisting public support for the work of the Committee for the Survey of the Memorials of Greater London, Lord Curzon of Kedleston said that it seemed to him that there was an ever-increasing need for the activities of a society which should devote itself as a special duty to the record of old buildings and objects before they had been ravished by the zeal of the curio-hunter or swept away by the needs of the times. We are glad that Lord Curzon has called attention to this matter, as the zeal of those engaged in town planning may at times lead them to disregard the claims of antiquity and historic interest, and it is well that this aspect of the matter should be occasionally brought to their notice. Not the least of the claims of this Committee to public support is the fact that its operations should have the effect of bringing to the notice of local authorities those objects of interest whose claims to preservation are worth serious consideration, even at the expense of some modification of town-planning schemes.

North Side, Clapham Common, S.W.

We learn that Messrs. J. & R. Kemp, of High Holborn, have disposed, on behalf of the owners of the freehold, of the row of old houses and their gardens, about 3 acres in extent, in North-side, Clapham-common, whereof some historical particulars were recently published in our columns. The leases will expire in the course of next March; it was at one time contemplated to purchase the property as a site for the proposed new Westminster Hospital, but the negotiations were subsequently relinquished, and it is now feared that the fine old "Queen Anne" houses will be pulled down.

Khartoum Cathedral.

An appeal has been made by the Building Committee of Khartoum Cathedral for the funds to complete their scheme. The appeal has been made in an illustrated pamphlet issued by the Committee, and in which an account of the whole scheme is given. Readers will remember that the architect for the building is Mr. R. Weir Schultz, of London, while the painted glass in the lancet windows at the east end of the Cathedral was designed by Miss Mabel Esplin.

Architecture in Museums.

Mr. Eugene Bourdon, of the Glasgow School of Art, recently delivered a lecture in the Kelvingrove Art Galleries on "Architecture in Museums." Mr. Bourdon referred to the small accommodation provided in museums and art galleries for exhibits of architecture. In galleries in London and Paris there were to be found on view fragments of architecture or casts. Even casts were expensive, and might occupy too much space to the detriment of painting and sculpture. But there might at least be shown models of famous pieces of architecture, such as the model of the Acropolis in Kelvingrove. In Paris the State purchased old houses and converted them into museums, but that practice was not to be entirely commended. It was all very well to preserve such a house as Provand's Lordship, but it would become rather monotonous if the Corporation purchased a number of old houses and placed them, say, in Kelvingrove Park. After all, architecture was a living thing, and an old house diverted from its legitimate purpose became a dead thing, just as a church that was no longer worshipped in ceased to be a church. But in Glasgow there was, he thought, too little attention paid to the preservation of old buildings, not quaintly old buildings, but buildings belonging, say, to the eighteenth century, of which there were some good examples in Glasgow, which were ignored because the general public did not know where to find them. They might show in museums not only models but photographs of architecture. It would be interesting for travelled people to compare the models and views with the originals, and the exhibits would be something of an education to the untravelled public. He advocated the cultivation of a general taste in architecture. It was different from painting. A man might buy a bad painting and hang it in his drawing-room, where it would be seen by only a few people. But a man, because he owned a piece of ground, had no right to build thereon a building which was offensive to the general public. Exhibits in museums such as he suggested would, he believed, prove a valuable education in architecture to the public.

Carstairs Railway Station.

Mr. W. A. Paterson, Engineer-in-Chief of the Caledonian Railway Company, has made plans for a reconstruction of the junction station at Carstairs, with platforms 1,000 ft. long, and a bridge in two spans of 58 ft. and 92 ft. to carry the public road over the widened line.

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MEETINGS.

FRIDAY, FEBRUARY 27.

Institution of Civil Engineers.—Mr. C. S. Meik on "The Use of Reinforced Concrete in Connection with Dock and other Maritime Work." 8 p.m.

Architectural Craftsmen's Society, Glasgow.—Mr. J. S. Boyd on "Mediæval Architecture of St. Andrews and the East of Fife." 7.45 p.m.

Leicester and Leicestershire Society of Architects.—Mr. C. E. Mallows on "Hampton Court Palace." 8 p.m.

MONDAY, MARCH 2.

The Architectural Association.—Professor W. S. Purchon on "Architecture and Environment." Nomination of officers for Session 1914-15. 8 p.m.

Royal Society of Arts (Cantor Lecture).—Mr. J. Pennell on "Artistic Lithography" (Lecture III.). 8 p.m.

Society of Engineers.—Mr. T. J. Gueritte on "Esperanto." 7.30 p.m.

Royal Sanitary Institute.—Mr. A. E. Munby on "Elementary Science." 7 p.m.

University of London (Victoria and Albert Museum).—Mr. Banister Fletcher on "Renaissance Architecture." 5 p.m.

TUESDAY, MARCH 3.

Institution of Civil Engineers.—Discussion on papers "Rail-steels for Electric Railways" and "Rail-Corrugation and its Causes." 8 p.m.

Society for the Promotion of Roman Studies.—Mr. G. A. T. Davies on "The Dacian Campaign of Trajan in A.D. 102." 4.30 p.m.

University of London (British Museum).—Mr. Kaines Smith on "Greek Art and National Life." 4.30 p.m.

WEDNESDAY, MARCH 4.

Royal Archæological Institute.—Mr. R. H. Forster on "The Corbridge Excavations, 1913." 4.30 p.m.

Carpenters' Hall London-wall (Lectures on Arts Connected with Building). Mr. Charles Spooner on "Woodwork—Old and New." 7.45 p.m.

Royal Sanitary Institute.—Mr. A. E. Munby on "Elementary Science." 7 p.m.

THURSDAY, MARCH 5.

University of London (British Museum).—Mr. Banister Fletcher on "Ancient Architecture." 4.30 p.m.

University of London (Victoria and Albert Museum).—Mr. Kaines Smith on "The Nature of Beauty." 3.30 p.m.

FRIDAY, MARCH 6.

The Architectural Association.—Exhibition of educational cinematograph films.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A meeting was held at the R.I.B.A. on Monday, at which a paper was read by Mr. Paul Waterhouse on "London Railway Stations," at the conclusion of which an interesting discussion took place. In consequence of the present R.I.B.A. regulations as to abstracts of papers, we are unable to do justice to Mr. Waterhouse's most interesting paper.

CORRESPONDENCE.

Re the Booming of X. Y. Z.

SIR,—Replying to yours of the 19th inst., I may say that I am not so much concerned in this instance with what you have written, but with what you have not written. You gave prominent publication to the serious charge of an anonymous correspondent that you assiduously puffed and published the rather poor and plagiaristic designs of X. Y. Z., but you did not meet or repudiate the charge. In the literary and illustrated pages of the *Builder* the productions of X. Y. Z. seemed to me to be the only possible ones which could be referred to, and in my letter of the 18th inst. I made it clear that I thought so, and yet there is no repudiation.

I note that you do not agree with my criticism of the premises. My only criticism on that particular work was directed to the placing of the structural supports on the ground floor, directly under the great voids above, and no doubt resting on the lintels of corresponding voids below. Do you wish me to understand that you, as an architect, approve of such methods of construction? Yet this is the only piece of originality displayed. The entrance in the centre we have all seen many times; the balcony arrangement you quote as being similar to Pennethorne's in Regent-street; while the piece of lace frilling on the top cornice reminds me of a running vine and bunches of grapes which used to adorn a public-house in Oxford-street. Originally designed as a drop pattern for a verandah, it was inverted and used as a cresting, and when the periodic painting in natural colours took place the effect was undoubtedly great.

The "clever design" promised and illustrated in your issue of January 16 is simply a rehash of the illustrations supplied to the *Daily* —— of the —— January with the accompanying letterpress, cutting the *Builder* terms of competition to pieces, and setting up their own, is nothing more nor less than a reproduction of the old residential type of Regent-street and probably traced schoolboy fashion from some old print. The ignorance and impudence of these parties in entering such a production in the *Builder* competition was astounding, only equalled by the assessors awarding them the first prize, using almost identical wording supplied by X. Y. Z. in the *Daily* —— forming about the most barefaced piece of team playing in the lurid history of competitions assessed by the profession.

I had some sympathy with the proprietors of the *Builder* at the time, thinking that they, with the honest competitors, had been sold, but the present booming of X. Y. Z. in your pages seems to make it clear enough that the whole affair was a piece of commercialism, and is merely a development of the original plan of campaign, suited to the moment.

Do you suppose that your readers have so little wit as not to see through the game, or that even Regent-street tradesmen will be taken in by it? . . . As to your remark: "Work which I consider has merit will receive the recognition due to merit and to that alone," I can only say, if the measure of X. Y. Z.'s work (and their morals) is the acme of your ambition, and you fill the pages of the *Builder* with such stuff, it will not be long before a funeral and an epitaph will be required for the *Builder*.

14, *Elgin-avenue, W.* JAS. YOUNG.
February 23, 1914.

[*** Having deleted names, we give this letter, and leave our readers to form their own conclusions, which will, we think, be similar to our own. There is an old French proverb, "*Honi soit qui mal y pense*," which our correspondent should ponder over. We have informed our correspondent privately that if he has better work to illustrate than that we have published we shall be glad to have it, but so far it has not been sent.—ED.]

Substitutes for Teak.

THE following letter from Mr. Alexander L. Howard on "Substitutes for Teak," appeared in the *Timber Trades Journal* for the 14th inst.:—

"SIR—I am glad to see from your issue this week that Messrs. Denny, Mott, & Dickson have called attention to the practice which has obtained of late of adding the word "teak" to several different timbers which really have no claim to this valuable wood.

A great effort has, no doubt, been made during the past years to find fresh supplies of teak or really satisfactory substitutes, and a great amount of money has been spent in the effort, but so far no real substitute has been discovered.

At the same time, on account of the steadily advancing price of teak, many other woods have been exploited and the term "teak" used in connection with them. All of these woods, although they possess valuable qualities of their own, have no sort of right to the name "teak."

When other traders use the word like this, and people actually inquire for African teak, Borneo teak, Eng teak, etc., it is difficult to know what to do. I should like to supplement the reply of the Director of the Royal Botanic Gardens at Kew with a few remarks. So-called "African teak," properly called "iroko," is hardly like teak at all, either in colour, texture, or, indeed, in any respect. If it may be said to resemble any other well-known wood it is more like greenheart. It is a valuable timber—hard, capable of taking a fine surface. It does not appear to contain any oil similar to that in teak, and at present it is too early to speak of its durability. Without any knowledge of its botanical term, it appears likely to be the wood of some acacia. Yang from Siam (*Dipterocarpus turbinatus*), Gurjan from the Andaman Islands (*D. turbinatus*), Eng from Burma (*D. tuberculatus*) are all very similar in character, but none of them in any respect like the produce of *Tectona grandis*.

They are all heavier in weight, different in grain, and contain different chemical properties. The preservative quality of teak when in contact with iron is well known. This feature is entirely absent in the products of Dipterocarpeæ. Teak is singularly reliable, shrinks little, and hardly absorbs moisture, if at all; the other three woods shrink, perhaps, to a greater extent than any other hard wood from India. They are also liable to warp and twist unless used with the utmost care and thoroughly seasoned, and they absorb moisture freely. In their own countries, where they are used to a great extent, they are not held in much estimation for durability in exposed work. They may, however, be better in England in this respect, where the climate is not so trying and the white ant is no trouble. So far there is hardly sufficient experience to judge whether the timber is durable when exposed. Borneo camphor wood, which has also been called teak, is the produce of *Dryobalanops aromatica*, another of the family of Dipterocarpeæ, and resembles closely the other three. It, however, possesses one pronounced difference from teak, *i.e.*, that any iron or steel in contact with it, if exposed to damp, causes a black stain. In all other respects it is very similar to the Yang, Eng, or Gurjan.

ALEXANDER L. HOWARD.

Tower House,
40, Trinity-square, London, E.C.
February 7, 1914."

FIFTY YEARS AGO.

FROM a notice of the Ladies' Sanitary Association in the *Builder* of February 27, 1864:—

CLEANSING.

Unclose the dark chamber,
Where fever and death
Have breathed out infection
With poisoning breath.

Let light and pure air in
Through windows and door;
Cleanse the walls and the ceiling
As well as the floor.

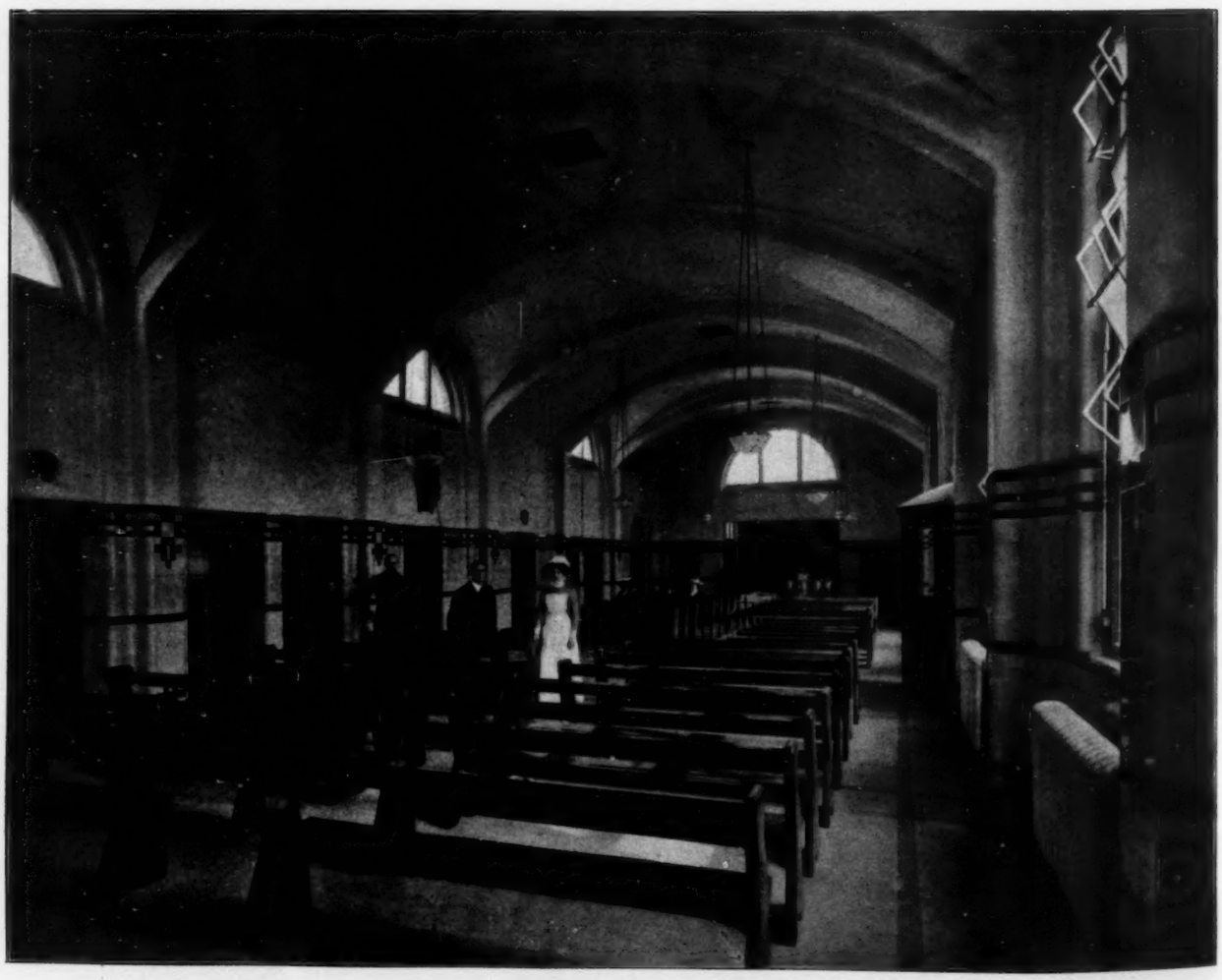
Bring back to the dwelling
That choicest of wealth,
The purity, beauty,
And blessing of health.

[*** Verses were thought to be efficacious as aids to sanitary science in 1864.—ED.]

AN OLD LONDON BURIAL GROUND.

In clearing the site of the vacated King's College Hospital for Messrs. W. H. Smith & Son's new premises in Portugal-street, Lincoln's Inn-fields, have been found many hundreds of coffins, with a range of vaults in a catacomb beneath what was the forecourt and garden of the hospital. By the west gates stood the watch-house, and Gilbert-passage with one or two of the original bulk-shops of Clare Market. These remains—to be reinterred in Brooklands Cemetery—are those of burials, to a computed number of 16,000, in the parochial graveyard of St. Clement Danes, which was closed sixty-three years ago. Mr. H. C. Ellis, of No. 46, Fenchurch-street, E.C., is the architect of the new buildings, upon which, for the fabric, a sum of about £153,000 will be expended.

NEW OUT-PATIENTS' DEPARTMENT.—SOUTH FRONT.



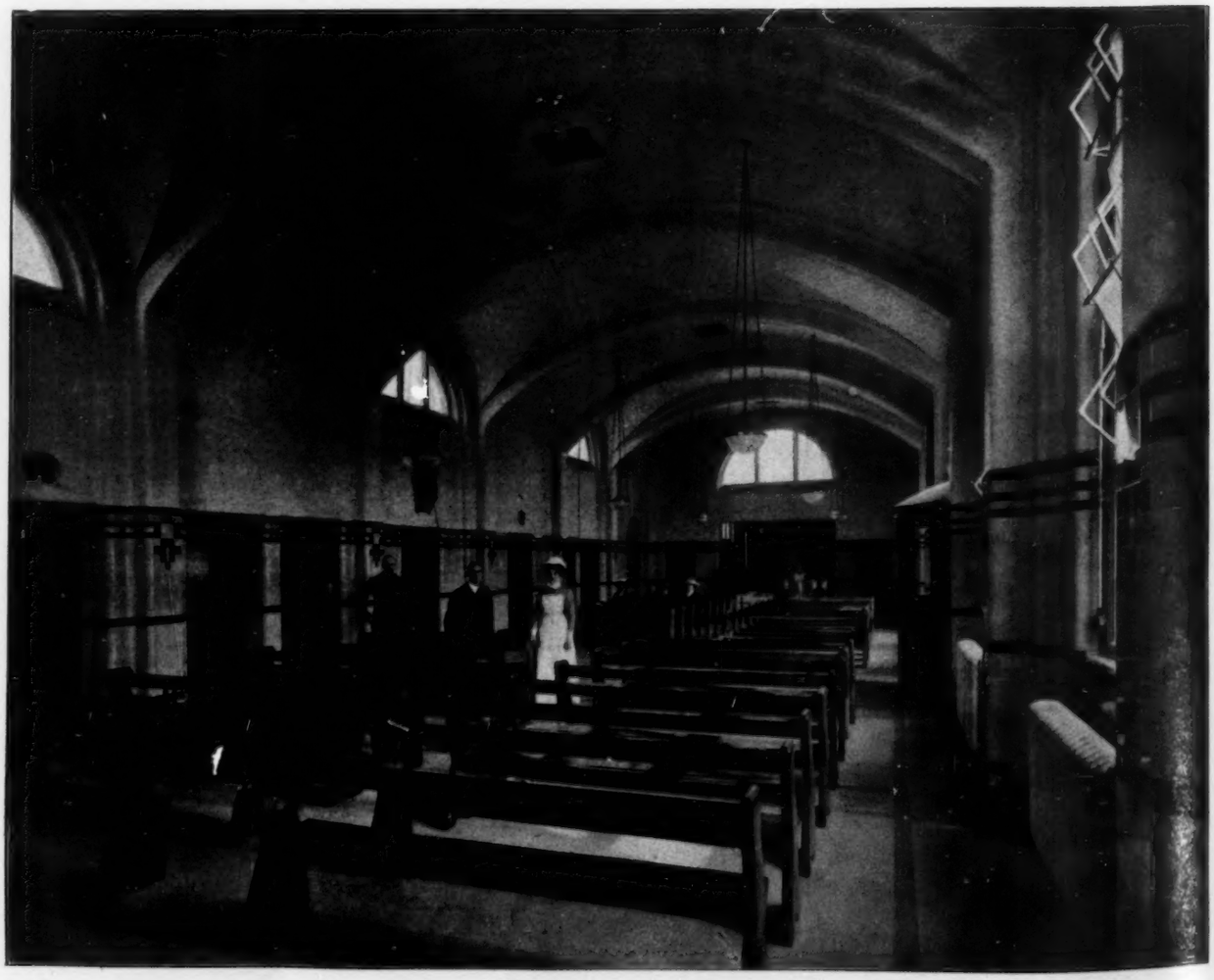
NEW OUT-PATIENTS' DEPARTMENT.—VIEW OF WAITING HALL.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—MESSRS. YOUNG & HALL, ARCHITECTS.

Block A, Facing South.

MOUNT VERNON HOSPITAL, NORTHWOOD.—Mr. Frederick Wheeler, F.R.I.B.A., Architect.

New Out-Patients' Department.—South Front.

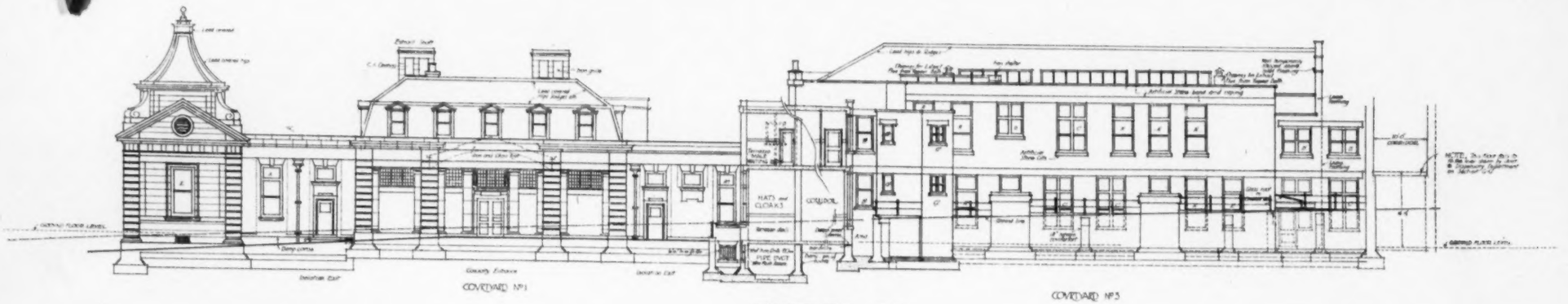


New Out-Patients' Department.—View of Waiting Hall.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Messrs. Young & Hall, Architects.

BLOCK A, FACING SOUTH.

MOUNT VERNON HOSPITAL, NORTHWOOD.—MR. FREDERICK WHEELER, F.R.I.B.A., ARCHITECT.



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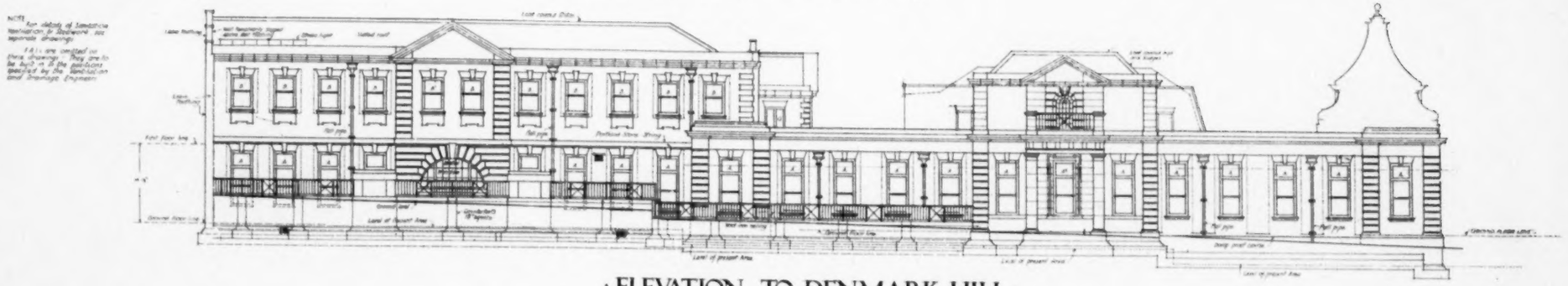
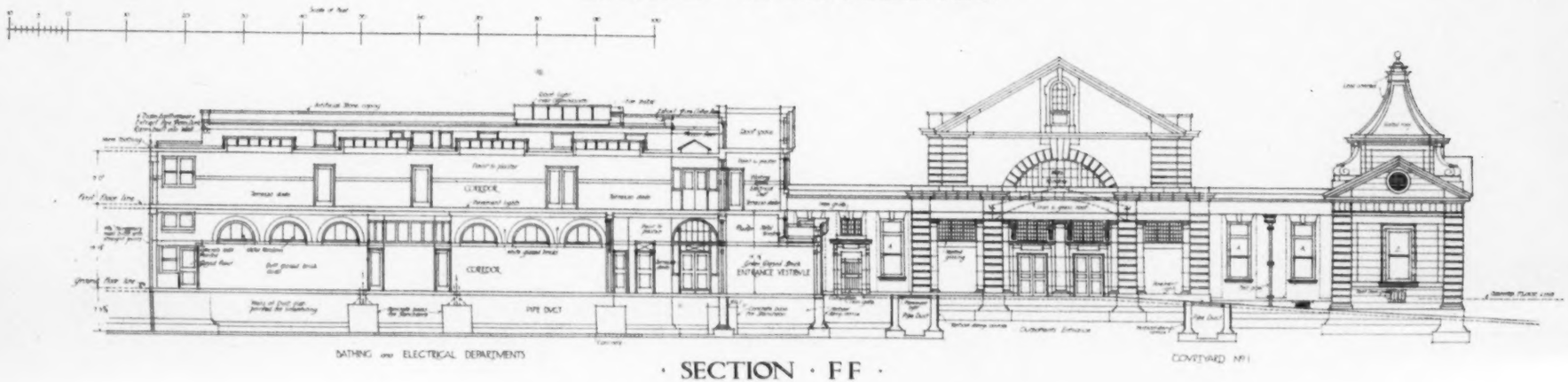
NOTE. The letters and Numerals placed against the sections refer to floors on the 1inch scale drawings



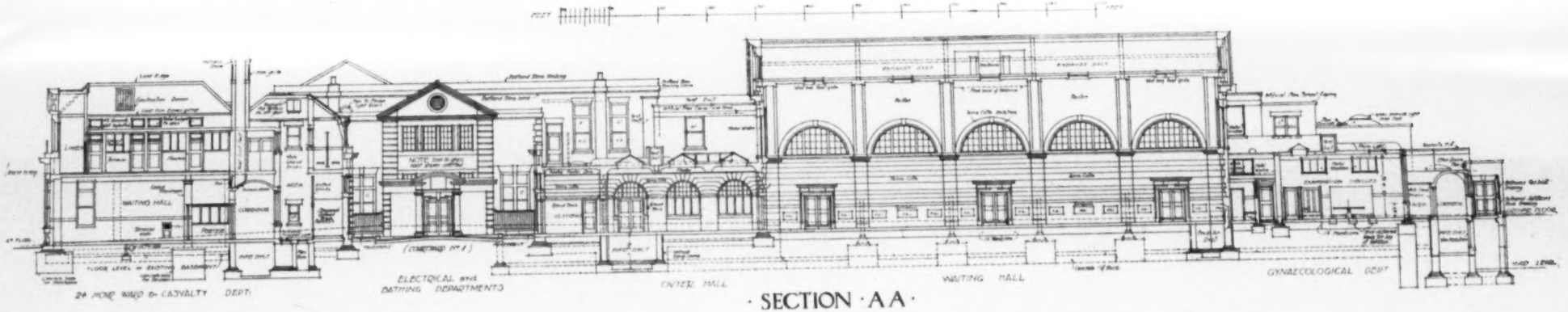
· ELEVATION TO DENMARK HILL ·



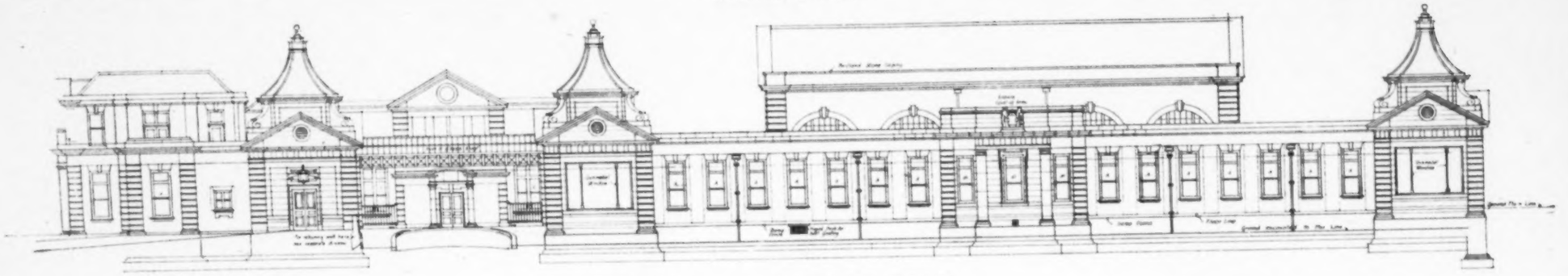
· SECTION · F F ·

OUT-PATIENTS' DEPARTMENT.—ELEVATION AND SECTIONS.

KING'S COLLEGE HOSPITAL, DENMARK-HILL, S.E.—MR. WILLIAM A. PITE, F.R.I.B.A., ARCHITECT.



· SECTION · A A ·



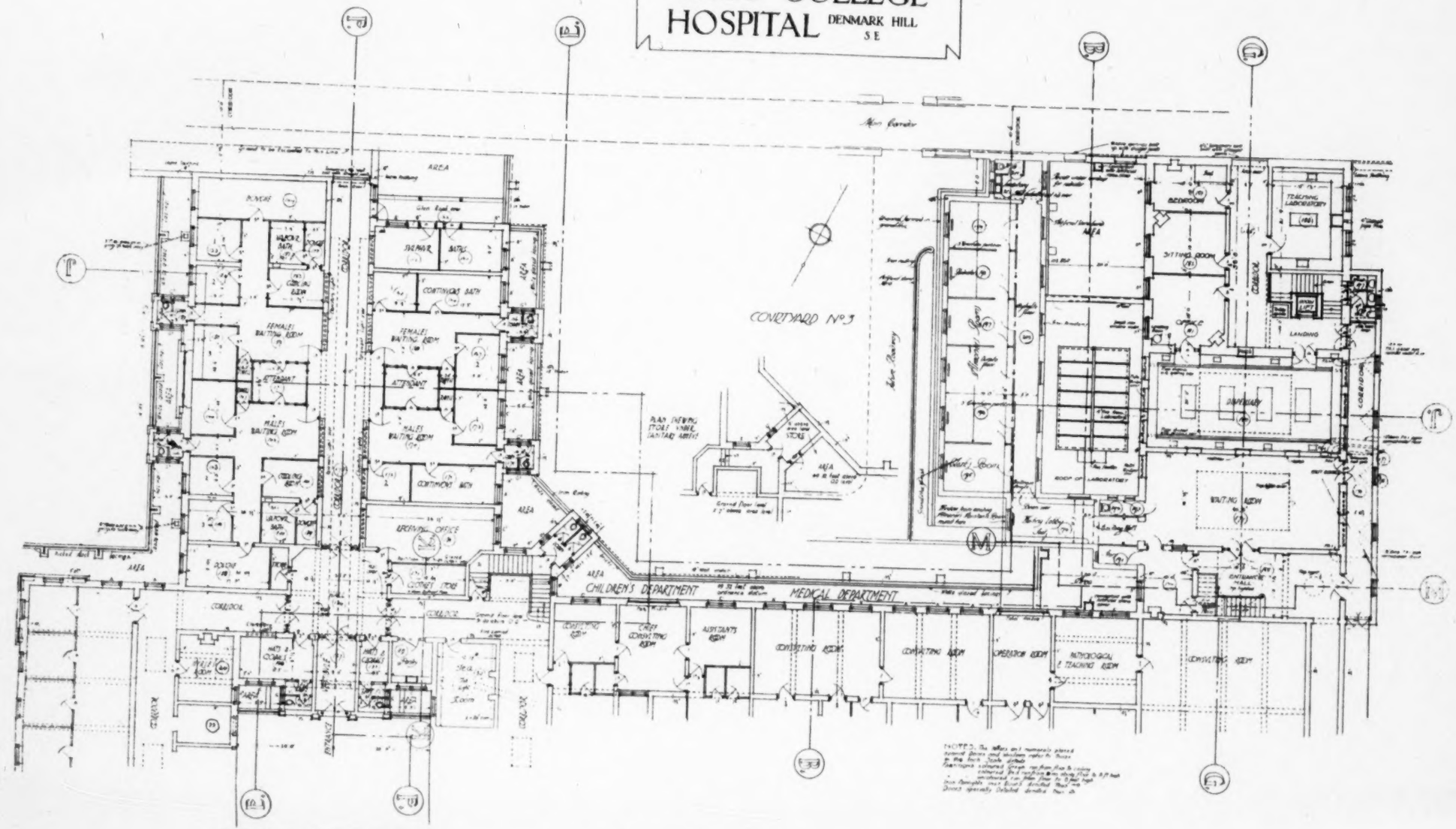
· ELEVATION TO BESSEMER ROAD ·

· WEST ELEVATION · (COURTYARD No 2)

Out-Patients' Department.—Sections and Elevations.

KING'S COLLEGE HOSPITAL, DENMARK-HILL, S.E.—Mr. William A. Pite, F.R.I.B.A., Architect.

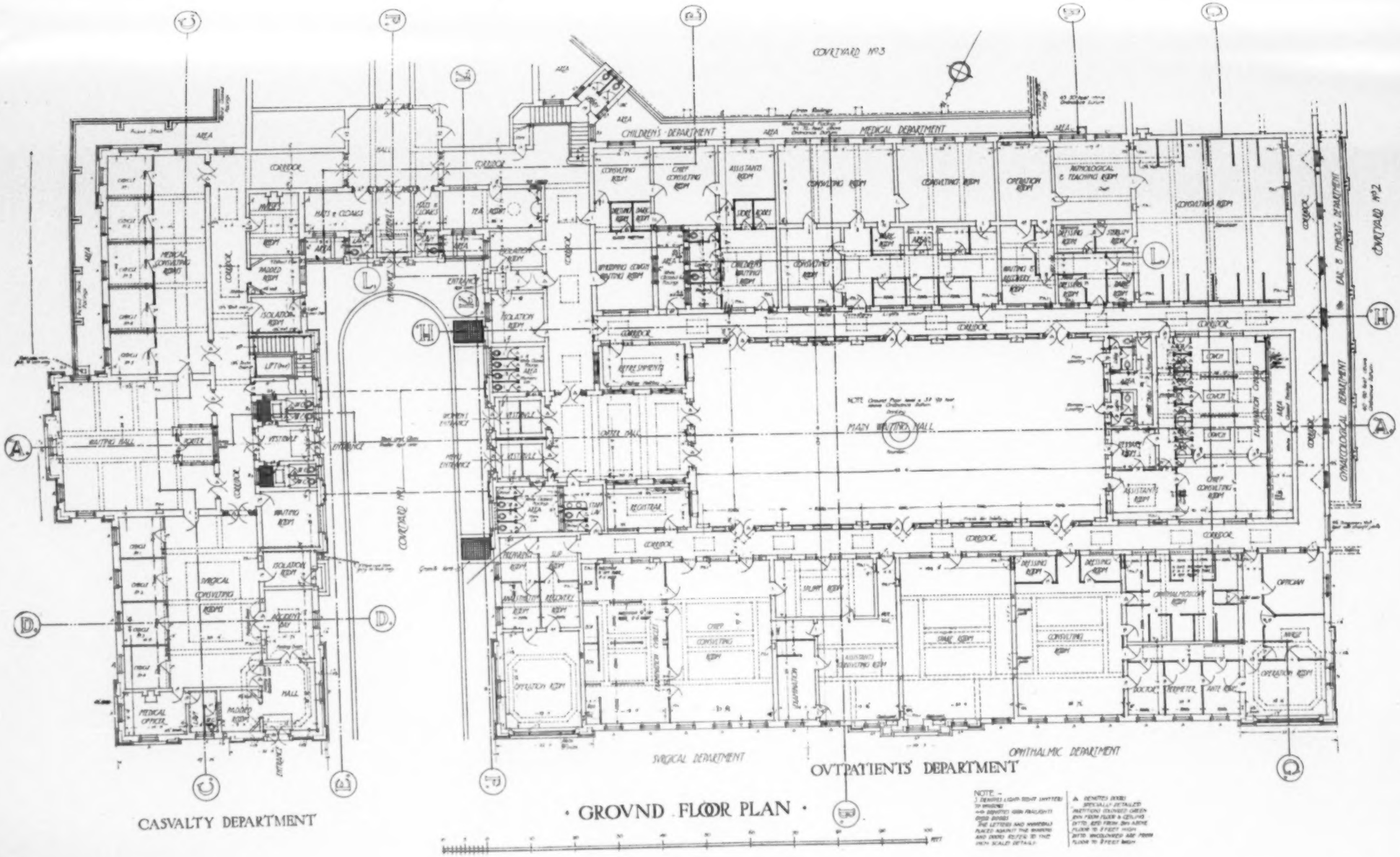
KING'S COLLEGE HOSPITAL DENMARK HILL S.E



· GROUND FLOOR PLAN ·

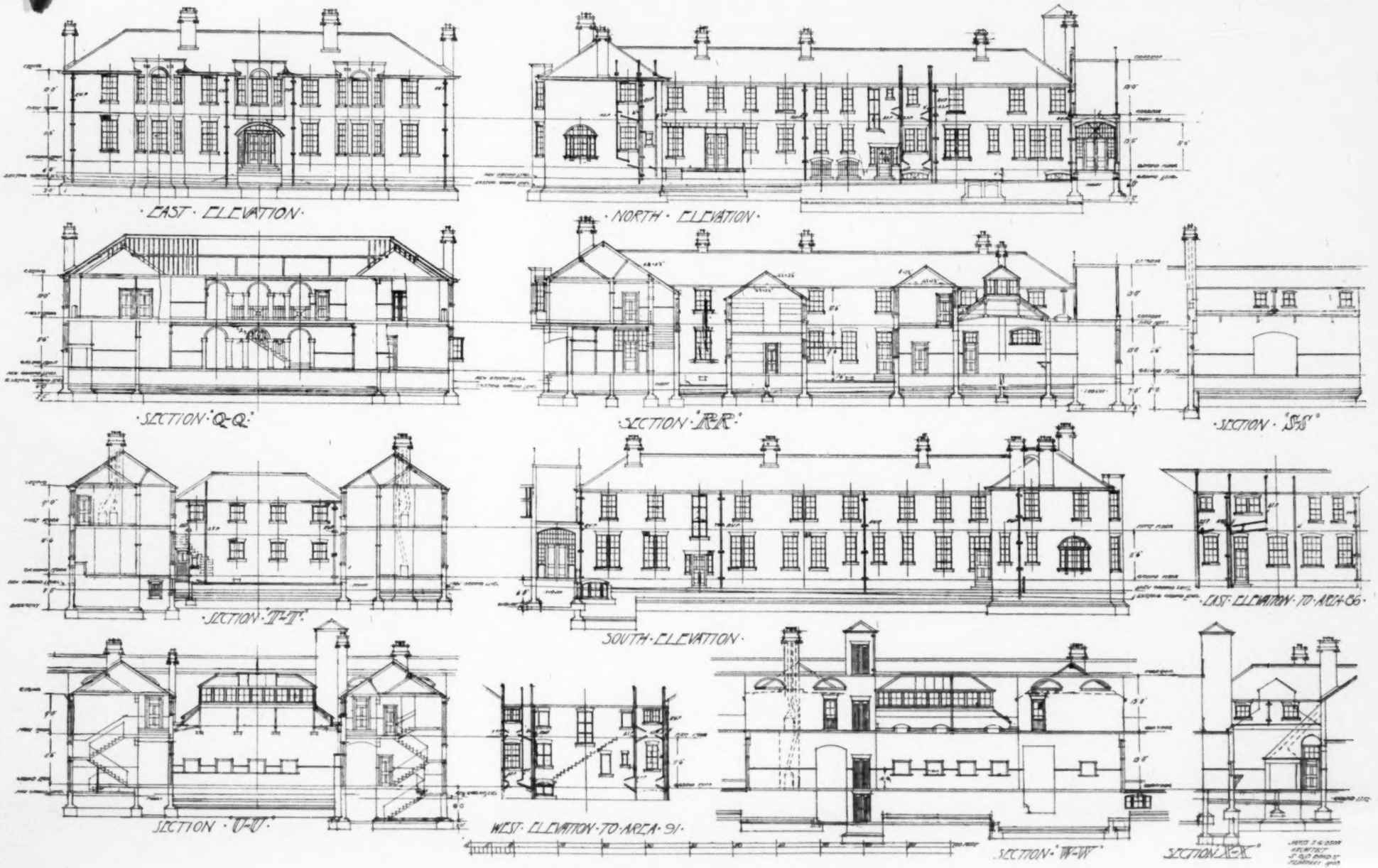
OUT-PATIENTS' DEPARTMENT.—GROUND FLOOR PLAN, BACK PORTION. (FOR FRONT PORTION, SEE OTHER PLAN.)

KING'S COLLEGE HOSPITAL, DENMARK-HILL, S.E.—MR. WILLIAM A. PITE, F.R.I.B.A., ARCHITECT.



OUT-PATIENTS' DEPARTMENT.—GROUND FLOOR PLAN, FRONT PORTION. (FOR BACK PORTION, SEE OTHER PLAN.)

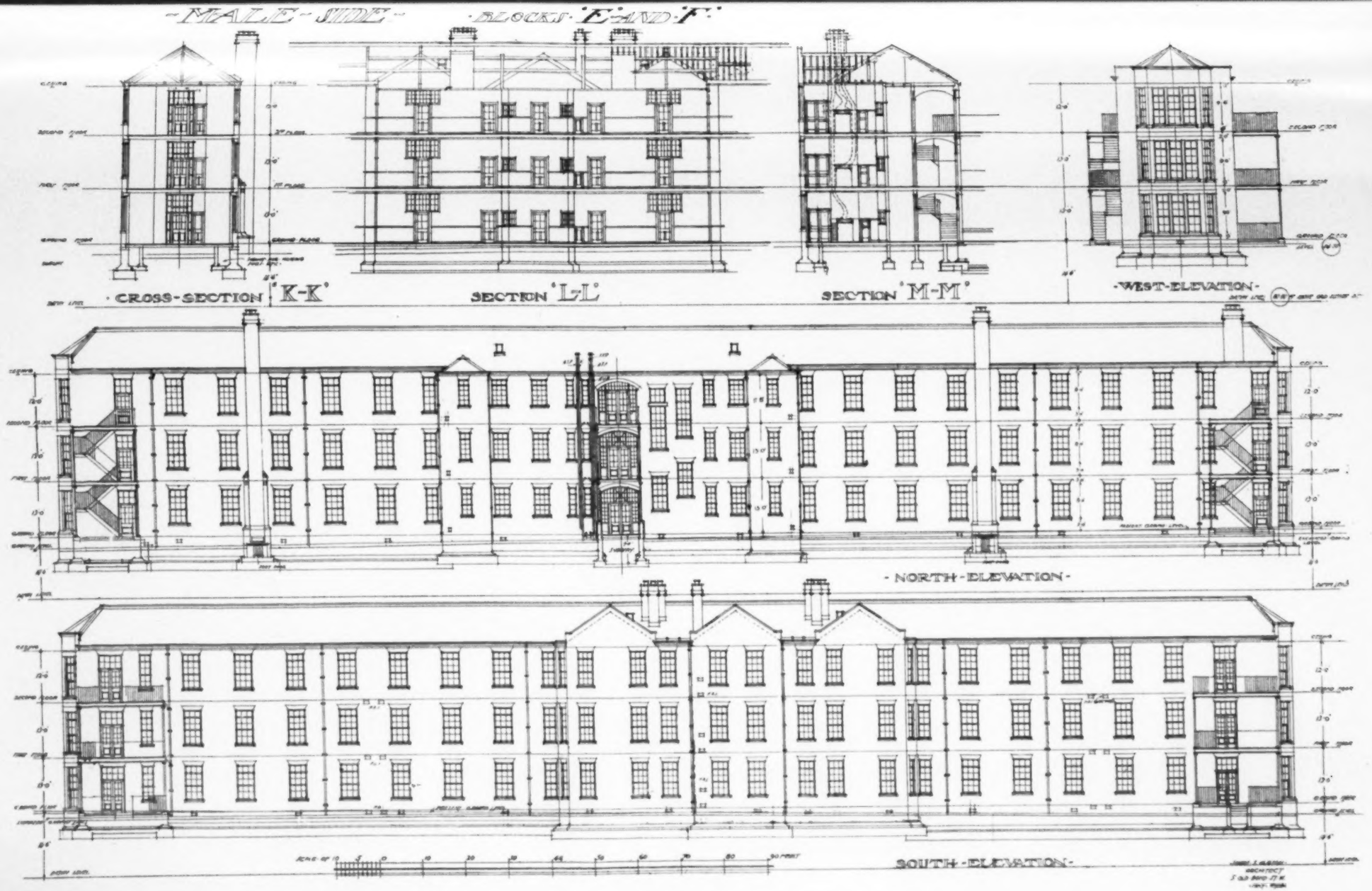
KING'S COLLEGE HOSPITAL, DENMARK-HILL, S.E.—MR. WILLIAM A. PITE, F.R.I.B.A., ARCHITECT.



ADMINISTRATION BLOCK.

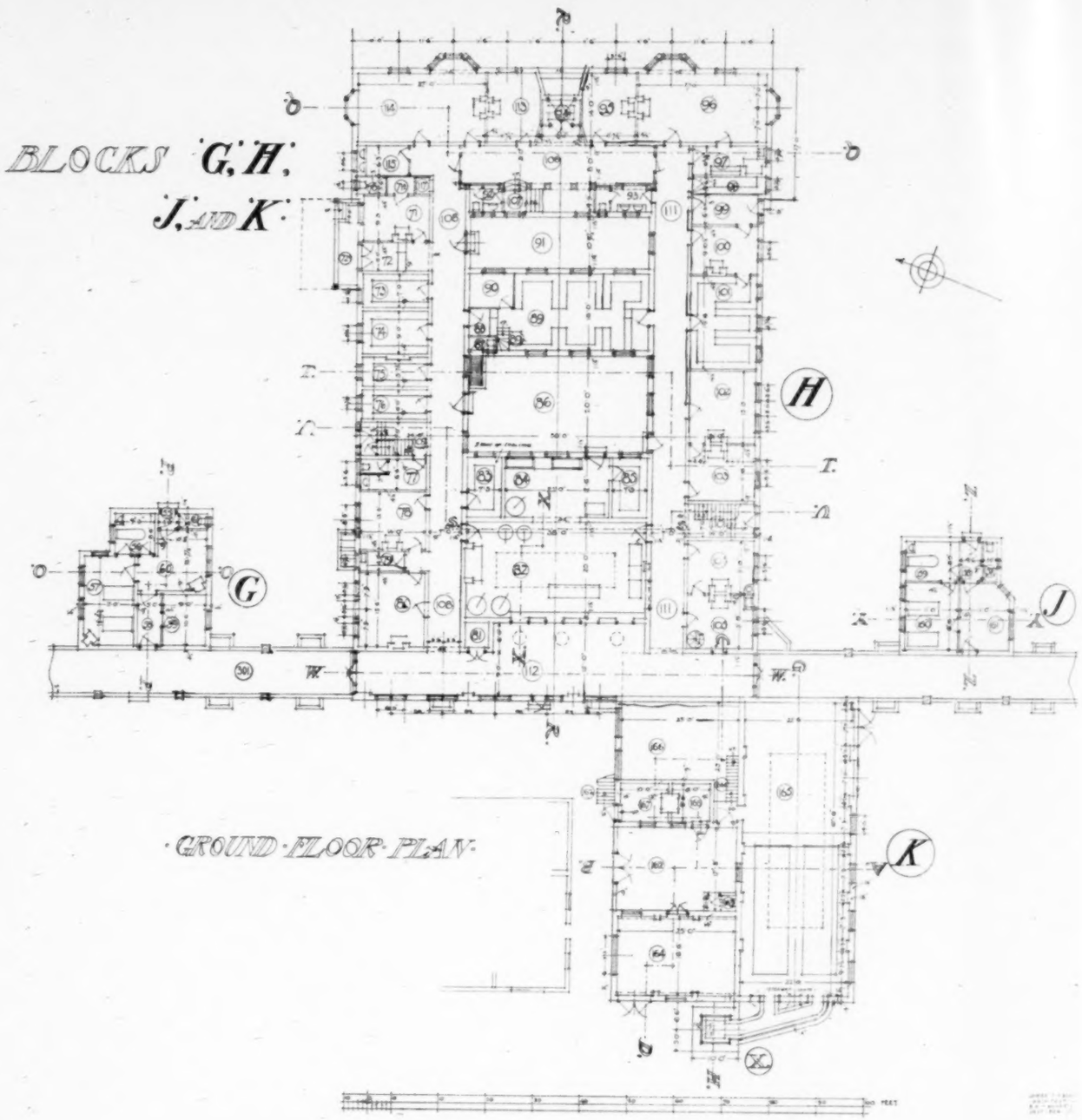
WANDSWORTH INFIRMARY.—MR. J. S. GIBSON, F.R.I.B.A., ARCHITECT.

MALE SIDE BLOCKS E AND F

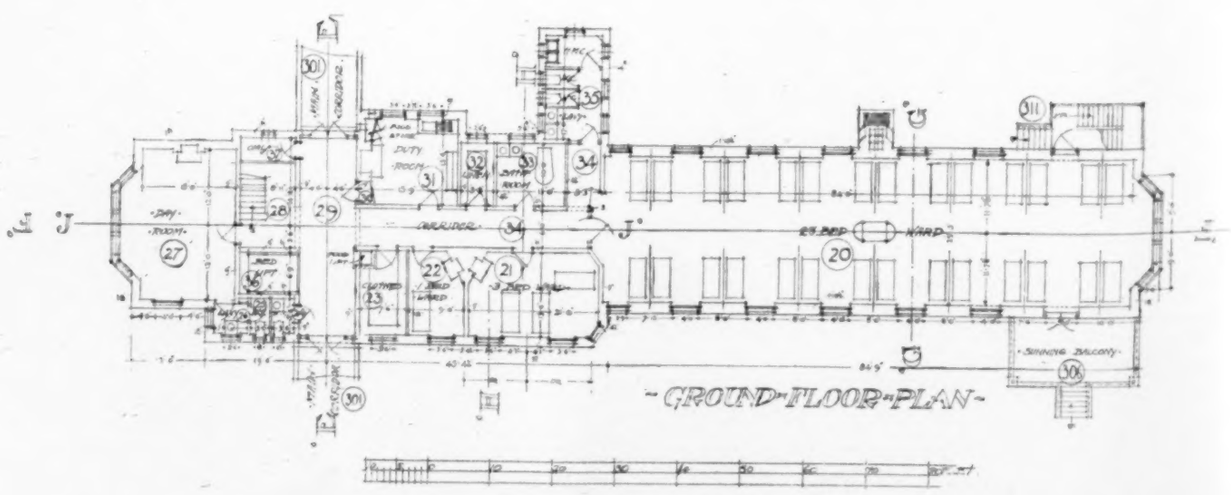


Ward Blocks.

WANDSWORTH INFIRMARY.—Mr. J. S. Gibson, F.R.I.B.A., Architect.

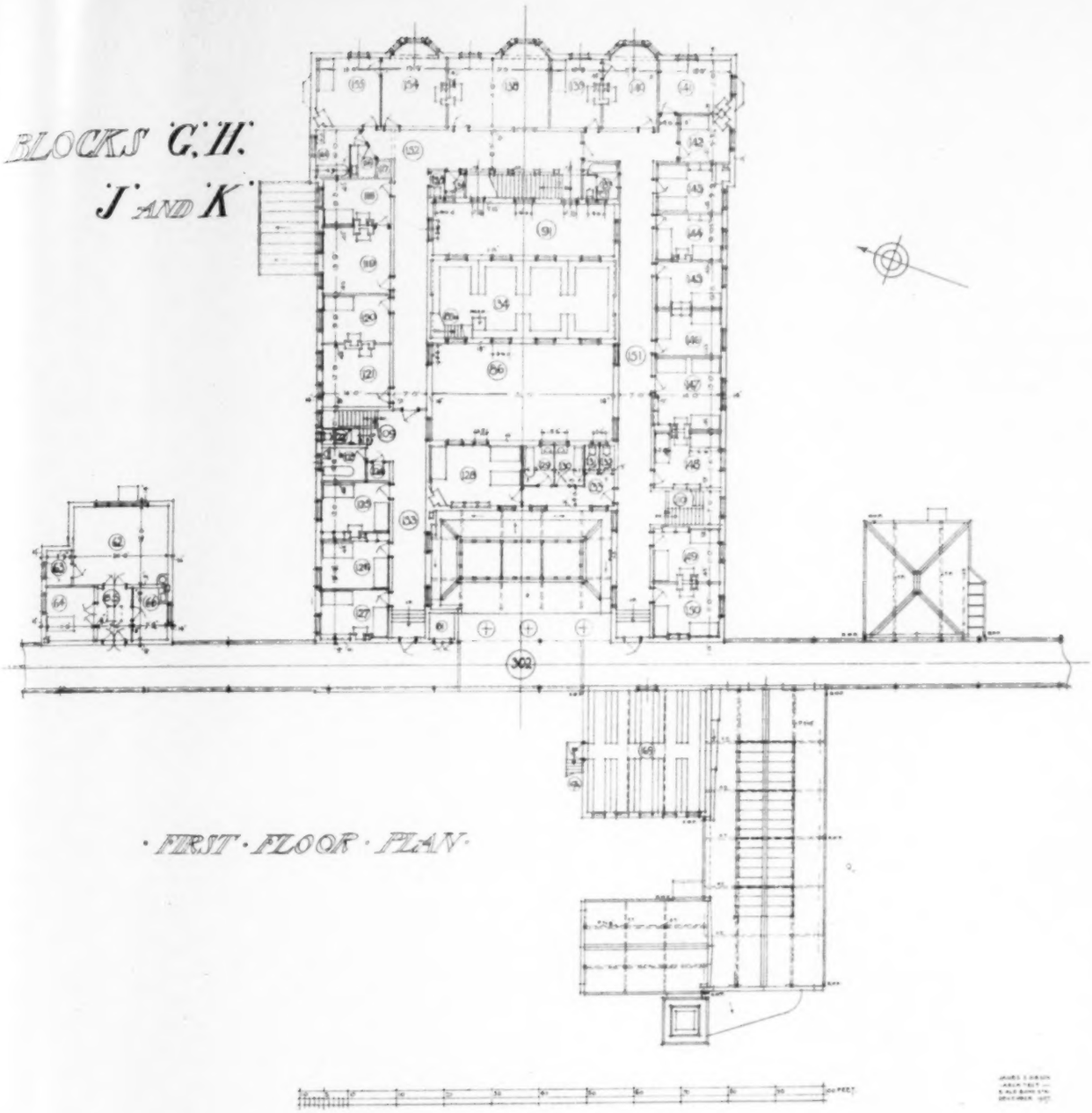


ADMINISTRATION BLOCK AND RECEIVING BLOCKS.

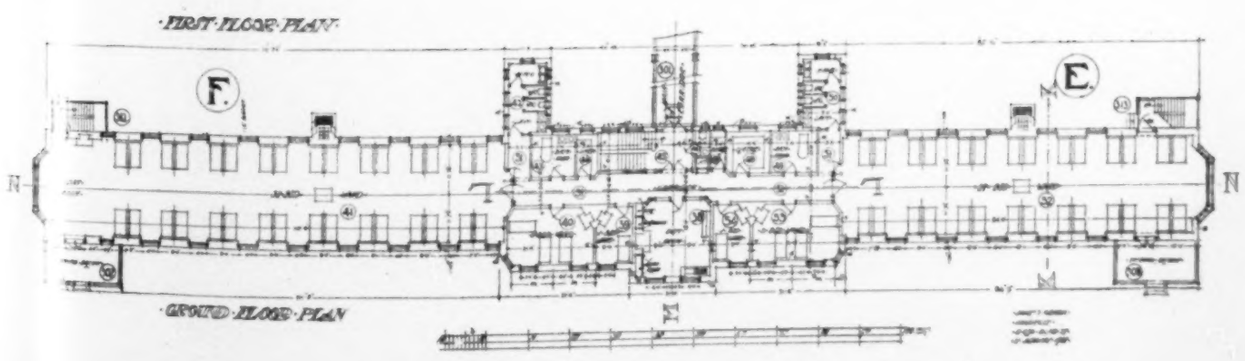


WARD BLOCKS C AND D.

WANDSWORTH INFIRMARY.—MR. J. S. GIBSON, F.R.I.B.A., ARCHITECT.

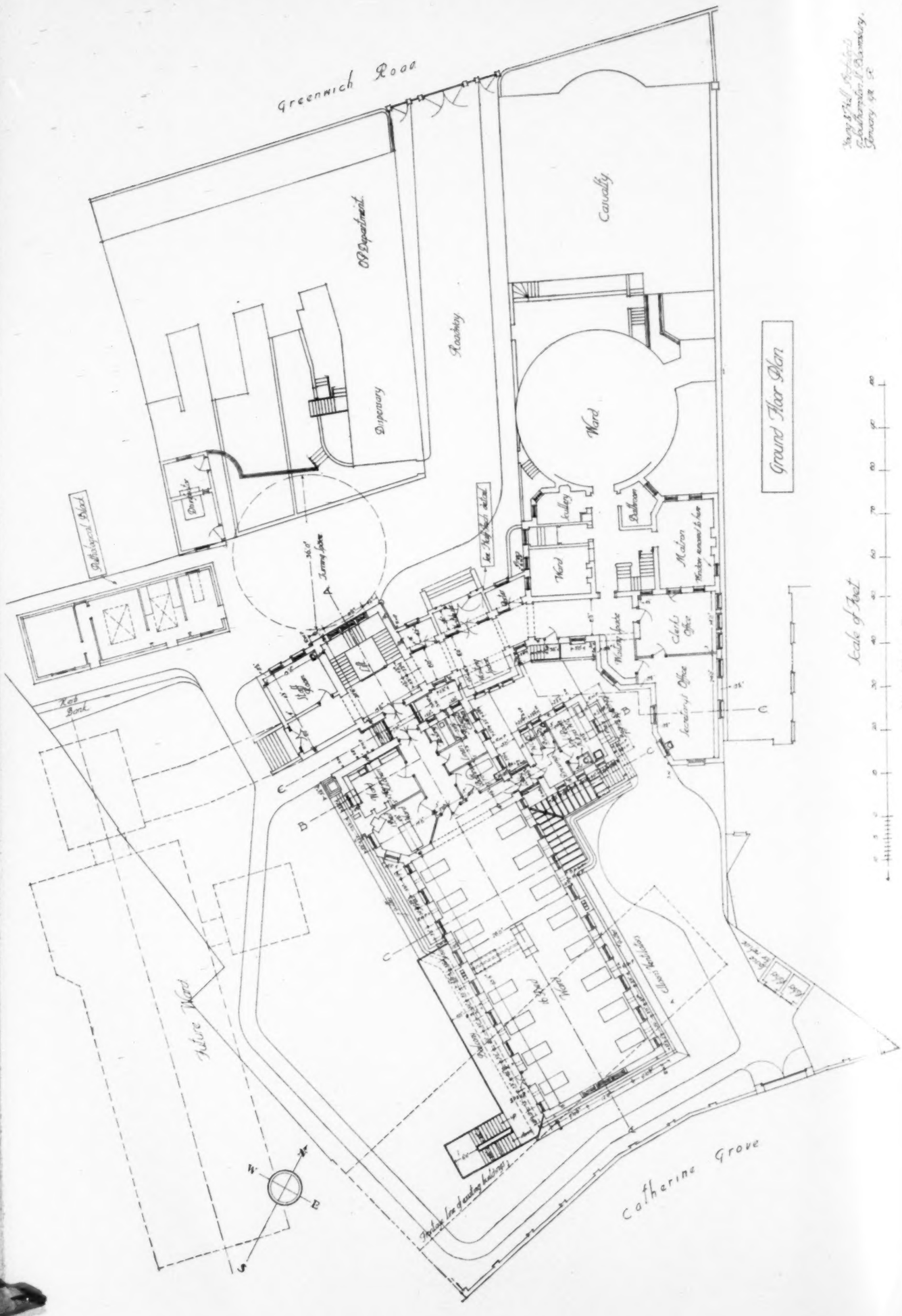


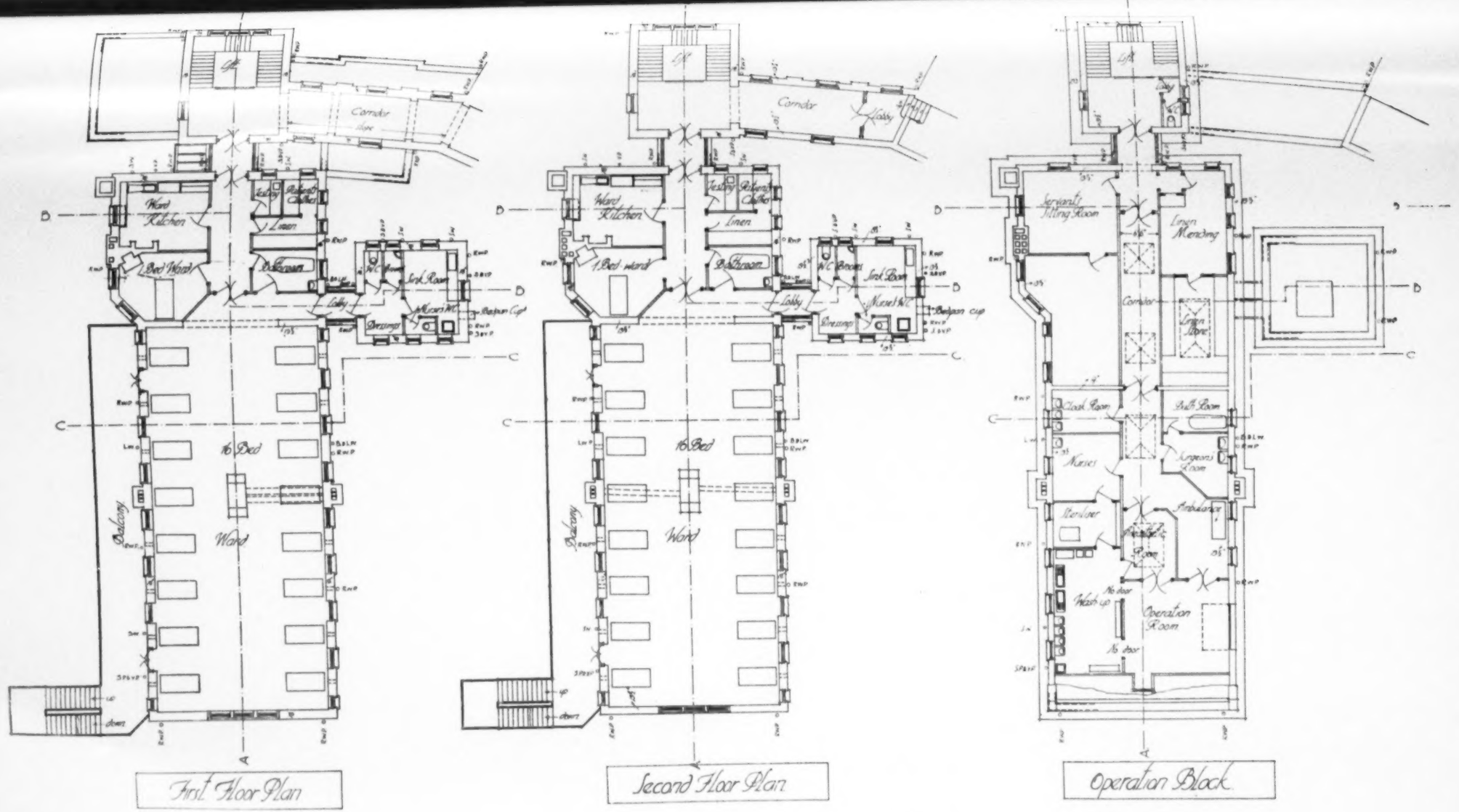
ADMINISTRATION BLOCK AND OPERATING THEATRE.



FEMALE WARDS.

WANDSWORTH INFIRMARY.—MR. J. S. GIBSON, F.R.I.B.A., ARCHITECT.


Greenwich Road
Casualty
Out Department
Dispensary
Roadway
Ward
Pathological Block
Kerb
Kerb
Future Ward
Catherine Grove
Ground Floor Plan
Scale of Feet
New Ward Block.



First Floor Plan

Second Floor Plan

Operation Block

Scale of Feet

10 5 0 10 20 30 40 50 60 70 80 90 100

NEW WARD BLOCK.

THE MILLER GENERAL HOSPITAL, GREENWICH.—MESSRS. YOUNG & HALL, ARCHITECTS.

LIGHTING, HEATING, AND SANITARY ENGINEERING SECTION.

VENTILATION BY MEANS OF PURIFIED AIR.

THE question of the purity of the air we breathe must always be one of the most engaging and serious problems. Whether the place be the home, the office, the workshop, the vehicle, the place of amusement, or even the street, the condition of the atmosphere is equally important. It can scarcely be too emphatically asserted that more than one-half the ills we suffer from are due to the slow poisoning produced by the foul air of the rooms in which we live and breathe.

It is a popular belief that the contamination of the air of a place in which a number of persons are congregated is due to an abnormal amount of carbonic acid gas. This is supposed to cause the stuffiness, smell, and disagreeable taste usually perceived. Such, however, is far from being the case. Carbonic acid gas is a tasteless and perfectly inodorous gas. It is also practically harmless, except in concentrations far greater than are ever met with in the worst cases of bad atmospheres.

The fact is that we are constantly throwing off from the skin and lungs the waste products of the body, which putrefy, and, combined with supersaturation, overheating, and motionlessness of the air, are the main causes of fœtid atmospheres.

The usual method of overcoming these difficulties so far has been the introduction of fresh air into rooms either by means of gratings in the wall behind radiators or by pumping it in at suitable points. Even so there remain a number of objections; but these could largely be met if the air which is introduced were purified first. This has become possible of late by the commercial production of ozone. So long ago as 1785 Van Marum observed that oxygen gas through which an electric spark has been passed possessed a peculiar smell and at once tarnished a bright surface of mercury; but it was not until the year 1840 that the attention of chemists was again called to this fact by Schönbein. This celebrated chemist showed that the peculiar strongly-smelling substance, to which he gave the name of ozone, was capable of liberating iodine from potassium iodide and of effecting many other oxidising actions.

For many years much doubt existed respecting the exact chemical nature of this oxidising principle, for the simple reason that it was found impossible to obtain ozone except in very small quantities, and that an exact investigation of its composition was rendered still more difficult by its extremely energetic properties. Researches, however, conducted with the greatest care, have shown that ozone is nothing more than concentrated oxygen, and the steps by which this conclusion has been arrived at constitute an admirable example of the successful solution of an apparently insoluble problem by the accumulation of the results of many independent investigations. To Andrews belongs the credit of having first proved that ozone, from whatever source it may be derived, is one and the same body, having identical properties and the same constitution, and also that it is not a compound of two or more elements, but oxygen in an allotropic form.

Ozone (in nature) is always present in the atmosphere. Its principal sources are probably the electric discharges during thunderstorms, the silent discharge from clouds, the evaporation of water (and especially of saline water as in sea foam), and the action of some vegetable products on the air. It is also formed by the action of sunlight on the clouds. The ozone present in the atmosphere plays an important part in keeping the air pure and fresh and destroying the deleterious organic matter constantly passing into the atmosphere from decomposing flesh, animal exhalations, etc.

As ozone exists naturally in the atmosphere over the sea, about hill tops, and elsewhere it has been rightly designated "Nature's disinfectant," and presents this extraordinary advantage over all other disinfectants, that, while destroying the deleterious matter or organisms in the atmosphere, it imparts to the air at the same time certain positive properties, rendering it more healthful and invigorating for respiration.

In the open country, and especially at the seaside, ozone can always be detected; but in the air of towns it is either absent or exists in very small quantities, which, however, if present, are most advantageous to health. Organic matter, smoke, sulphur compounds, and other impurities with which the air we breathe is always vitiated, destroy ozone—*i.e.*, are in such disproportionate quantity that they absorb all the ozone. If there were enough of it in the air these impurities would be swept away.

Apart from the ordinary advantages to a healthy person an ozonised atmosphere possesses positive and curative principles, valuable properties in many common ailments. In anæmia ozone has been found very beneficial. It has the effect of multiplying the red corpuscles of the blood, increasing the appetite, and generally adding tone and vigour to the system. It is probable that the future treatment of phthisis will be indebted in no small measure to this gas.

Ozone, as already stated, unlike oxygen, is possessed of a very powerful and penetrating odour, and very slight traces of this gas can readily be detected by the sense of smell. It has the power, in strong concentrations, of oxidising or destroying the offensive germs that the air may contain; indeed, it is the most powerful oxidising agent known, which is due to the fact that it readily parts with the third atom of oxygen contained in the molecule. The conversion of oxygen into ozone is expressed chemically by the equation $O_2 + O = O_3$, and it is this third atom which splits off so easily and enters into combination with other bodies that is the basis of its value for the purification of the atmosphere, etc.: in fact, it is the most powerful sterilising agent known.

When manufactured artificially, pure ozone, if diluted to the strength in which it is used for such purposes as ventilation, etc., has a most agreeable and refreshing odour, similar to that met with at the seaside. The sanitation of rooms by ozonised air (antiseptic ventilation) diminishes the number of organic germs and renders innocuous the exhalations from persons in confined spaces. Ozone also neutralises the unpleasant effect of cooking and other smells, and removes tobacco smoke, fog, etc.

This property of ozone to neutralise smells (generally known as deodorising) is of great commercial value apart from the incidental use of ozone in this respect when it is applied for ventilating purposes. There are many trades and industrial processes where smells are produced which are not only almost unbearable to the persons immediately concerned, but are liable to cause a nuisance to the neighbourhood, and often result in injunctions being obtained against the owners of such business. Such places are public kitchens, hide and skin warehouses and tanneries, soap works, bone mills, oil and manure works, etc. In cases of this kind the unpleasant nuisance is generally produced by the putrefaction in the air of minute organic particles given off from the substances under manufacture, and these particles can readily be treated and oxidised by ozone, so that the trouble is abated.

It is hardly necessary to enumerate the many instances where one would like to find the present ventilation improved. Most Londoners no doubt noticed the difference in the air when the Central London Railway adopted purified air ventilation in their "Tubes." In this case it is worked on the "Ozonair" system, and we will briefly discuss the latter.

The system consists in drawing the air supply from as clean and pure a source as possible and removing the smuts and other solid floating matter by means of a special filtering screen. During this operation practically the whole of the sulphurous acid and other deleterious gases met with in all large cities are absorbed. Incidentally, the screen can be arranged so as to cool the air up to about 10 deg. Fahr. difference between the external and internal temperature. The quantity of water used for washing amounts only to a few gallons per hour for a comparatively large installation. The cleaned air is then passed into the mixing chamber, where it is purified and partially sterilised by the addition of a minute quantity of pure ozone, which also gives it a refreshing character. The purified air is forced by the fan into the building through ducts, which are provided with openings at suitable points, in the usual way.

The filter screen is constructed of very finely-woven metal gauze, mounted in a suitable manner on a framework of galvanised angle irons and wrought-iron tube. It usually assumes the form of a zigzag when looked at in plan, and the area is determined by the amount of air which is required to pass into the building. The gauze is kept covered with a very thin film of water by means of an atomising appliance, which breaks up the water into a very fine spray. In fact, the water in the front of these screens is generally present in the form of a fine mist or cloud. The air, being drawn through this mist and the film on the screen, is thoroughly washed, and all suspended matter and sulphurous impurities are removed. At the same time the extensive surface presented for evaporation is instrumental in hot weather in reducing the temperature of the incoming air by several degrees.

After passing the screen the air enters the mixing chamber, into which the ozone is also introduced. From here it is drawn into the duct by a fan driven by an electric motor. The ozoniser, which is, of course, one of the most important parts of the installation, is made up of units, each consisting of two electrodes, separated by a dielectric. The smallest size consists of two units, each larger size having two additional ones, up to ten units. There are several parts of the installation of minor importance which we need not refer to here.

The plant is very simple to work, and can be left under the control of an inexperienced person. The main working is automatic and depends on the handling of two or three electric switches.

In places where it is required to purify the air in one or two rooms or offices, and where the number of persons is a small factor in the conditions of ventilation, these small ozonisers may be used with advantage. They are made in several forms, for continuous or alternating current, taking from only 20 watts to 130 watts, depending on the size and the current supply. They are suitable for use in rooms or places of from 3,000 to 12,000 cubic ft. capacity, and some of the larger ones have an output of about 60,000 cubic ft. of ozonised air per hour.

THE LIGHTING OF LONDON.

An ordinary general meeting of the London Society was held on Tuesday of last week at the Royal United Service Institution, Whitehall, when Dr. Leon Gaster, Hon. Secretary of the Illuminating Engineering Society, read a paper (illustrated with a number of lantern slides) on "The Lighting of London."

Colonel R. E. Crompton, C.B., Consulting Engineer to the Road Board, presided, and in introducing the lecturer remarked that a few years ago it was seen that the lighting of our areas out of doors and equally the lighting of interiors of buildings was an art in itself, which was not to be left to competition between gas and electrical engineers or any kinds of oil lighting. They must give credit to Dr. Gaster as being one of if not the first to see that it was necessary to treat illumination as an art in itself.

Dr. Gaster then delivered his lecture. It was, he said, interesting to note that, although the lighting of the streets was now a public duty, in days gone by it was a purely private

obligation. In 1415 Sir Henry Burton, then Lord Mayor of London, ordered all householders to hang out lanterns during the dark winter evenings, and in subsequent legislation a fine was imposed on those who did not comply with this order. The illumination of those days was very feeble, and the bad lighting gave rise to great disorder in the streets. Consequently they found that in many cities, notably Paris, street lighting came to be associated with the duties of the police. During the last century a remarkable change had come over street lighting. Probably the old oil lamps introduced about 1800 gave considerably less than 1-candle-power; to-day our streets were lighted by gas and electric lamps giving over a thousand candle-power. The need for this better illumination had arisen largely through the increased speed of traffic and the very much greater extent to which our streets were used for pleasure and business by night. Not only had the illuminating value of lamps enormously increased, but authorities were now taking more interest in the best methods of using these lamps. In 1908 the City of London sent a special deputation abroad to inspect the lighting of various Continental cities, and several American cities sent over to Europe at intervals experts (in some cases the electrical and gas engineers and also the financial advisers) in order to study the conditions over here. Those visits had led to some remarkable changes throughout the City of London. The method of central suspension by wires over the roadway, which was in use for many years in the Continental cities, was now becoming common. Curiously enough, this method of central suspension, which was considered to have several advantages from the lighting standpoint and traffic requirements, was used centuries ago in the streets of Paris, and old prints could be seen showing the oil lamps hung by ropes and presented to the gaze of admiring citizens. As a result of the improvements initiated in the City of London about the end of 1911 it was estimated that the amount of light in the streets of the City area, both gas and electric, would be increased by some 600,000 candle-power, but that the annual saving in the lighting would be about £6,000. Such results showed what was possible to be accomplished by studying the lighting of streets in a more scientific manner. Both gas and electric lighting had made enormous strides since the introduction of the latter about thirty years ago, and of late much attention had been paid to the design of special dioptric globes intended to distribute the light better along the street and improve the illumination of those parts of the pavement most remote from the lamps. There was no doubt that street lighting in itself was a big subject. They had to consider the kind of lighting suited to various streets, the conditions which were desirable in the interest of traffic and pedestrians, and the desirability of artistic effect. Besides the actual amount of light needed in various streets, consideration should be paid to the effect of driving from a side street into a brilliantly illuminated main street, which was apt to dazzle the driver. In some German cities a system of grading the illumination of lamps of progressively increasing candle-power was adopted, so that the change from the comparative obscurity of the side street to the brightness of the main thoroughfare took place more gradually. While the lighting of rural roads fell outside the scope of the paper, there were nevertheless certain main roads running right out of London which served as arteries of traffic and deserve to be carefully lighted. A short time ago the members of the London Society were considering the effect of the immense illuminated signs on the Embankment, the glaring effect of which was considered objectionable from the artistic standpoint. This was a view that would be shared by many people, but it might be pointed out that those who objected to the use of such signs for advertising had also the obligation to encourage the use of illuminated signs in situations where they would be really useful. For example, much more might be done in the design of really artistic signs to indicate to the visitor the nature of public buildings, post-offices, call offices for telephones, railway-stations, etc., and even the names of our main streets might surely be treated in this way. Some progress had been made in this respect during the last few years, and was very much appreciated by the general public. A word might also be said as to the possibilities of lamps outside such important buildings being treated in a more artistic manner. It appeared that we did not sufficiently realise what an important part light played in the appearance of a city by night. In many cases the lantern in which the lamp was placed was of artistic design, but owing to the glaring nature of the unshaded light the outlines of the lantern could not be seen. Lighting should really be closely associated with architectural design and with town planning, and if, as Sir Aston Webb recently advocated, we should come to possess the Ministry of Fine Arts, it might be hoped that the design of lighting fixtures for our streets and important buildings would be one of the things to be considered. Some years ago the author pointed out the need for some central authority to undertake the supervision of public lighting, some body which would have an incentive to make experiments, to assist those districts on which the expenditure of public lighting fell heavily, and to bring about some generally accepted standard as to the conditions of lighting certain classes of streets really needed. Such an authority might, he thought, well deal with the artistic aspects of public lighting as well. Greater London, extending over an area of roughly 75,000 acres was served by fifteen municipal electric supply undertakings and thirteen privately-owned electrical supply companies, and mainly by five gas companies. The bulk of the gas lighting, however, was carried out by the Gas Light and Coke Company. It would be seen therefore how very varied the lighting of London must be, and it was hardly surprising to find that within a distance of a couple of miles, say, from Aldgate to Bayswater on the same main road no less than six different systems of lighting could be seen. At the present moment, when a scheme for the unification of electrical supply throughout London was being considered, one might well ask whether it might not be possible to establish some form of central authority especially designed to deal with the lighting problems. Such a body, even though not undertaking the lighting of the respective districts, might be in a position to make some guiding recommendations which would be acceptable for the whole of London. He believed that the Road Board were already considering the organisation of illuminated signs of various kinds to indicate obstructions in the road and short turnings to motorists, and were thus undertaking one piece of the kind of work suggested. He ventured to hope that this body would take greater interest in the subject of street lighting in the future. Much might be said in favour of more and better lighting in the public parks, making them a more satisfactory recreation ground, not only in the day-time, but also in the evening, and helping to increase the general health of a large section of the public of London. In conclusion the lecturer said the standard of lighting in the main thoroughfares of a city might well be regarded as a criterion of its state of civilisation, and prosperity in other directions.

Mr. A. P. Trotter, in opening a discussion, referred to the prominent part which the late Sir William Preece had taken in the development of public lighting, and said that to him was due very largely the adoption of the principle that in all lighting what was wanted was illumination. It was Sir William Preece who was one of the very first to invent a practical instrument for measuring illumination, and it was very largely owing to his work that the science had become a distinct branch.

Mr. F. Bailey observed that when the City Corporation first adopted the Continental idea of lighting the streets from the centre of the roadway by suspension lamps some people imagined that it would produce merely a spectacular effect, but the experience of the last five years had shown the practical utility of the method. Referring to the subject of statues in London, he said that if these were things of beauty they should be illuminated at night, and if they were not worth lighting they had no business to be in the streets at all.

Mr. Baker, Electrical Engineer to the London County Council, said he did not think the lecturer's suggestion of a standard for lighting in London was practical—the conditions of different streets and different localities varied so greatly. He was convinced that the lighting of London had greatly improved of late years, but it must never be forgotten that the responsible authorities always had to consider the question of expense.

The Chairman said that while he believed the lighting of streets could be standardised with advantage, if Dr. Gaster was taken literally to say it was desirable that London should be lit from one source of supply he was advocating nothing short of disaster. Such a proposition was unthinkable if seriously considered. The idea of centralising the light supply of a great city like London must not be carried too far. As regarded the number of authorities governing London, that was a political question. On the whole he did not think the borough councils had done their work badly, and when they came to consider the lighting of London as a whole, both inside buildings and in the streets, there was no city in the world, in his opinion, which came near it. As a Londoner he was proud of the city as regarded lighting.

Dr. Gaster in a brief reply, said he had not advocated a central station to supply the whole of London with light. He was quite with the Chairman that such a thing might prove disastrous. What he had in his mind was that from an administrative point of view centralisation for London would result in better lighting.

WATER-HAMMER IN STEAM PIPES.

A RECENT issue of *Domestic Engineering* contains an article, of which the following is an abstract, on this interesting and very troublesome defect:—

"The precise causation of water-hammer in steam pipes is not always fully understood. What, for example, is the proximate cause of the clicking in steam pipes? This is due either to the blows at pipe bends or valves of plugs of water in rapid movement or to collision of plugs of water upon water at rest, or to the collision of plugs meeting from opposite directions. This is all easy to understand, but one does not visualise that these crackings over the length of a long piece of pipe arise from collisions of plugs travelling perhaps many feet, the rapid crackling simply indicating the rapidity of the movements involved. We have to discover how the water is put into such rapid movement. To do this the motive power must be discovered. This may be steam, or it may be, secondarily, air. Steam is approximately gaseous. Like all gaseous bodies it can be liquefied. But unlike the so-called permanent gases it will liquefy at such comparatively high temperatures as 212 deg. when at atmospheric pressures. According to the kinetic theory, a gas is merely an aggregation of extremely small molecules which are endowed by heat with the power of automobilism. Different gases possess different molecular velocities; for steam it is of the order of 1,800 ft. more or less per second, and the velocity of a mass of such molecules will depend upon the resistance against which they must make their way. In any cloud of steam surrounded by other gas at the same temperature the steam molecules are moving amongst each other, and those on the borders of the cloud are making their way slowly into the other surrounding gases. But if it be conceived that from one side of the cloud of steam all other gas be removed, then the steam molecules would have no molecules from which to rebound on that one side and would all rush down the empty lane.

This is what happens in a steam pipe: At some portion of the pipe there is water, cold relatively to the steam. Steam is admitted to the pipe and some of it condenses on the surface of the water, heating up the surface layer, which ceases to condense further steam. A valve is then opened in the course of the pipe; it is a valve against which, let us say, the water is lodging. The opening of the valve, allowing some water to pass, causes a disturbance of the surface, admits steam to the cold water, which promptly condenses so much steam as to produce a vacuum, into which steam rushes so violently that it piles up the water before it, and the wall of water is violently thrust forward by the steam and becomes a travelling plug of such energy that it is possible for great shocks to be set up which will readily burst or fracture cast-iron valves and other junction pieces.

The sequence of events above outlined is merely illustrative of what may happen, for the variations are as numerous as the ways of putting up steam pipes wrongly. One error formerly very common was to place a stop valve close to the boiler, taking off the steam by a vertical pipe to several feet high, when the pipe proceeded horizontally. This vertical pipe would be liable to become full of water if any steam could leak up into it from the boiler

or condense into it from other boilers on the main. The correct position of the stop valve is at the top of the vertical pipe, and from it the main ought to slope all the way to engine separator. If there must be dips in between the terminals, they must be drained, and the drain must act. Expansion bends, unless they project horizontally from a steam pipe, will block the flow of water and provide water to form a flying plug. Valves with conical ajutage will block back water if the coning is symmetrical. The cones should have horizontal bottom lines so as to be scalene in vertical section.

In designing any line of pipes or a system, all the possible combinations of opening, shut and leaking valves should be thought out to find if it is possible for water to collect. It is particularly desirable that the number of valves be a minimum. Numerous valves and ring mains are productive of danger points.

Where both air and water are present in a pipe it is possible for the air to be compressed at one end of the pipe, and for the compressing water to be flung back by the air into the steam end and do damage. Thus in a faulty arrangement the steam valve might first be opened slightly and promptly shut upon indication of trouble. And this very closing might produce a water-hammer by air rebound. Probably one of the more frequent hammer-causing faults is a slight slope of a pipe towards an obstruction with the formation of a long surface of water in a half-full pipe. This condition is one which might happen in a pipe which had been partially vacuous and nearly full of water. On admitting steam the traps would begin to lower the water, and produce the above conditions of a long surface to be broken into waves to set up rapid condensation."

THE "HALF-WATT" LAMP.

LAST August the British Thomson-Houston Company, Ltd., exhibited at their London offices the "Half-Watt" tungsten lamp, and the company now state that they have completely standardised the production of these lamps at their Rugby factory. The following is a brief tabulation of the chief features claimed for the lamp and a list of the sizes in which it is obtainable :—

Efficiency.—Half-watt per candle, or two candles per watt.

Average Useful Life.—800 to 1,000 hours.

Quality of Light.—Owing to the high temperature of the filament the light is much whiter in colour, it is stated, than that of the ordinary tungsten lamp, and approximates very closely to daylight.

Intrinsic Brilliancy.—The intrinsic brilliancy of the Mazda "Half-Watt" lamp is eight times as high as that of the ordinary tungsten lamp. For interior lighting this high intrinsic brilliancy renders it essential that the "Half-Watt" lamps should be enclosed in suitable diffusing spheres or bowls in order that the light may be agreeably diffused and effectively distributed. The following table shows the voltages and sizes in which the lamp is available :—

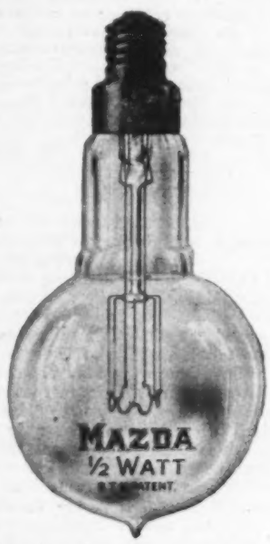
Volts.	Watts.	Approx. British C.-P.
50-65	300 500	600 1,000
100-130	500 1,000 1,500	1,000 2,000 3,000
200-260	1,000 1,500	2,000 3,000

The chief characteristic of this lamp is its high efficiency; instead of consuming between 1 watt and 1·25 watts per candle it consumes only 0·5 watt per candle, hence the name "Half-Watt." The filament of the "Half-Watt" lamp is operated in a bulb filled with an inert gas, such as nitrogen, instead of in a vacuum, as is the case with the usual types of incandescent lamps. The use of a gas-filled bulb and a special form of drawn-wire tungsten filament, wound in a close spiral and mounted in short loops, are the constructional features chiefly responsible for the high efficiency of the new lamp. In addition to their "Half-Watt" lamp, the company have developed a range of special fittings for use therewith.

THE PAINT AND VARNISH SOCIETY.

MR. A. S. JENNINGS presided on February 19 at St. Bride Institute over a meeting of the Paint and Varnish Society, when Dr. S. Rideal gave an illustrated lecture on "The Action of Town Air on Decorative Work: with Notes on the Effect of Lighting."

Dr. Rideal first drew attention to the very backward state of England in connection with dealing with the damage arising from the effect of coal smoke and smoke acids upon internal decorative work, and also on public buildings in large towns, and instanced Westminster Abbey and St. Paul's as examples of the evil. He entered at length into the various



Mazda "Half-Watt" Lamp.

Store Fitting for Use with Mazda "Half-Watt" Lamps in Shops, etc.

This fitting consists of a dome made of opalescent glass, covered on the under side with a cut-glass bowl supported by a hinged ring.

experiments which had been carried out and the observations made for determining the amount of soot deposited in the air from factories, domestic grates, railways, etc. In London alone the soot deposited amounted annually to 76,000 tons, and it carried with it tons of sulphuric acid which corroded and ate into nearly all metals and building stones. Much of the evil could be remedied by the abolition of the use of bituminous coal in large centres of population and substituting for it gas fires or smokeless fuel. He trusted that the new President of the Local Government Board would support fresh legislation to give stronger powers to deal with the smoke nuisance. He had tried to find out the origin of the rule which obtained in London and most other towns that with leasehold property the outside part had to be renewed every third year and the interior part every seven years. Sir Henry Tanner told him that Crown leases down to the early part of the nineteenth century did not contain any special painting covenant. When, however, Regent-street was rebuilt in 1813 the leases did contain covenants for repainting. In order to preserve paintwork and permit of delicate schemes and shades of internal decoration it was necessary that the smoke nuisance should be eliminated. Both oil and coal contained varying amounts of sulphur, ranging usually about 1 per cent. and occasionally up to 3 per cent. by weight. The action of heat and combustion of these sulphur compounds might give rise to a variety of products, of which the most important were hydrogen sulphide, sulphurous and sulphuric anhydrides. These were all acid, and all more or less deleterious to every kind of paintwork, varnish, and internal decoration. It might be taken as an axiom that the fuel or illuminant which contributed the least sulphur to town air was the most suitable one to use. A great number of materials used for decorative and constructive work were basic, and neutralised the condensed acid without the use of soap or alkali. Much havoc had been caused by these acids on imperfectly protected iron, and on stonework and masonry of public buildings, yet still no systematic steps to combat the evil had been adopted in this country. The protective coatings for external ironwork were well known to the members of the Society; their absence soon developed art into ugliness and a decay which even endangered the safety of the structure. All basic building stones were similarly attacked, marbles and dolomitic limestone with rapidity, and the oolitic and Portland limestones only to a lesser degree. Prevention was not always better than cure, but in America the new public buildings were being protected from corrosion so soon as they were erected, and ironwork for reinforced concrete was not allowed on the job without its cement protective to ensure the absence of rusting and corrosion, whilst the early stages of the erection of the building were in progress.

The lime and basic distemper on walls and ceilings played a very important part in this acid neutralisation. He found in one case 50 lb. of carbonate of lime as whitewash were used to clear-colour a room; this was capable of fixing very nearly 50 lb. of sulphuric acid, and he calculated that this power would not be exhausted for twenty-five years with gas used in the ordinary way and as at present manufactured. The nature of the illuminant, apart from the chemical by-products of air in a room, affected the painter in two distinct ways:—(1) The direct photo-chemical action of the light on the paint or varnish, which might have a destructive effect; and (2) their appreciation of the colours, or colour schemes, in a room was changed by the nature of the light. Discussing the chemical effects of illumination on decorative work, Dr. Rideal said it might be generally stated that artificial illuminants with the exception of arcs were for all practical purposes photo-chemically inactive, and consequently, provided the illumination in the room was uniform, no protection need be given. In rooms exposed to direct sunlight, or lit by arc lamps or mercury vapour lamps, photo-chemically inactive paints should be used, and paintwork in general should be covered with varnish; uniformity of illumination where possible should always be adopted. A much more variable and complex factor, however, was the physiological effect of the illuminant itself.

Most of their colour schemes in internal and external decorative work were done in daylight, and consequently the sun-spectrum or natural daylight was the normal standard of illumination. When they illuminated rooms artificially, unless the spectrum of that source of light was the same as that of the sun, the faults in the spectra of artificial illuminants might become evident by the apparent changes in colours caused by deficiency in, or absence of, light of particular wave lengths. The alterations in the so-called natural colours must, of course, be corrected to preserve the harmony of a colour scheme. On the one hand, the lighting authorities had been and still were trying to bring up their light to the daylight standard by "screens," impregnated mantles, cored carbons, vacuum tubes with various gases in them, mercury amalgams, and different arc devices to produce a comparable spectrum; but, on the other hand, it was evident that those interested in internal decoration must

take the light as it was, and not as it might be in the future, and correct their mistakes by using paints suitable for the illuminant intended. In the modern systems of indirect lighting, where the room or hall was illuminated by reflection off the ceiling, the opportunity of modifying the light spectrum clearly presented itself to the decorator. The ceiling, instead of being merely whitewashed with a basic wash, which he had advocated for fixing the sulphur, must be painted or distempered with the requisite colour to function as an absorption filter. Another point of great importance was the quantity of light reflected from walls and ceilings. The reflection coefficient of any surface under illumination depended on the nature of the surface and on the form of illuminant.

The reflection from ceilings and walls of interiors might be from 0·0001 to 0·01 candle-power per square inch. Silvanus Thompson stated that a whitewashed wall absorbs 30 to 40 per cent. of the light, and ordinary yellow or buff wallpaper usually wasted 50 to 60 per cent., deep scarlet and crimson wallpapers 70 to 75 per cent., brown paper 85 to 88 per cent., and therefore recommended pale tints. Unhappily this endeavour was checked by this smoke nuisance, and gave another cogent reason for its removal.

In conclusion, the lecturer summarised the most important points wherein internal decorative work was affected by town air, viz. :—(1) Some part of every room should be painted with basic distemper or whitewashed. The basic material must not be varnished over; this is in order that the sulphur acids may be readily fixed. (2) The main walls, if painted, should not be varnished, as this retards and hinders efficient ventilation. (3) Delicate dyes should be protected by varnishes. (4) Uniform illumination is to be desired and colours conformable to the spectrum of the illumination. (5) The worst enemy to be fought is smoke and dirt.

ELECTRICITY FOR COUNTRY HOUSES.

WE have received the following letter from Mr. Willcox, of the British Thomson-Houston Company, Ltd., referring to the article on the above in our issue of January 23. We also append the reply received from our contributor :—

SIR,—I am interested in your article, "Electricity for Country Houses," in the issue of your paper for January 23. On page 106 the article states, in reference to indirect lighting: "Indirect lighting is still more inefficient" (than other systems of lighting). This sort of statement is very misleading, and depends upon how the word "inefficient" is used. As a matter of fact, taking all-round efficiency of seeing, the B.T.H. "Eye-Rest" system of indirect lighting is the closest approach to daylight that there is to-day, and extensive tests have shown that with both direct and semi-direct lighting the ordinary eye loses more in efficiency (this is, fatigues more rapidly) in a given period than when the "Eye-Rest" indirect system of lighting is employed.

Lower down, the article states: "The fittings must be carefully spaced so as to give a perfectly even distribution of light from a white ceiling, and so as not to throw the shadows of their bowls on the floor." Evidently the writer has had little experience of the best form of indirect lighting, the "Eye-Rest" system, as such a phenomenon as an "Eye-Rest" bowl throwing a shadow on the floor is unknown.

Further down, the statement is made: "The lamps (indirect lighting) necessarily consume a large amount of current for effective candle-power"; and here again a general statement is dangerous. Indirect lighting does so much more than ordinary direct lighting that it is exceedingly unfair to make a comparison, as so many writers and others are apt to do, on the basis of watts consumed for the two systems. If direct lighting were compelled to give as uniform and complete a lighting result in a room as the "Eye-Rest" indirect lighting system does, the consumption usually credited to direct lighting would have to be materially increased. As a matter of fact, this company have on record numbers of installations where the employment of indirect lighting has saved from 10 to 60 per cent. in the current consumption as compared with the previous system of direct lighting replaced. It should be remembered that, after all, it is not mere physical efficiency in watts expended per foot candle of illumination secured, but a much larger question of *visual* efficiency, and extensive experience and the wide success of the best forms of indirect lighting, as in the "Eye-Rest" system, testify to the remarkable gains in visual efficiency, freedom from glare, headaches, eye strain, and nervous disorders, which are so prevalent under the prevailing systems of direct lighting.

I trust that you will do us the favour of publishing these comments and corrections to your correspondent's article.

F. WILLCOX, General Manager,
Lamp and Wiring Supplies Department.

Our contributor's reply is as follows :—

SIR,—I am much obliged to you for giving me an opportunity of reading Mr. F. W. Willcox's letter, but I really cannot enter into the polemics of definitions of efficiency in relation to lighting. There may be all sorts of efficiencies, but the only one that really matters is watts per candle-power, or, in other words, £ s. d., for light obtained. Of course, beautiful results are obtained by indirect lighting, and I am thoroughly in favour of this system where £ s. d. is of no account.

I have no brief either for "Eye-Rest" or "Eye-Strain" systems, but the former is more expensive than the latter, and I may quote the good old English saying that if you want a good thing you must pay for it.

THE WRITER OF THE ARTICLE.

NOTES.

Paris Sewage. A RECENT issue of our contemporary, the *Engineer*, contains the following interesting note on the difficulties experienced by the Paris municipal engineers in disposing of its sewage :—

"The experience of Paris in disposing of its sewage has not, on the whole, proved satisfactory. When the sewage farm was started at Achères it was solemnly declared that no more sewage would be diverted into the Seine, which was destined before long to recover its pristine limpidity. A few days afterwards the sluice gates were opened again, and the river has been receiving its heavy quantum of sewage ever since. It is not that the farms are a failure; they are simply insufficient for the needs of such a vast city as Paris. The Commission, whose duty it is to inspect and report upon them, insists every year upon the necessity of extending these farms. In its report, just published, for 1912 it points out that the Achères farm absorbed an average of 43,922 cubic metres per hectare during the year; at Carrières-Triel the average was 34,363 cubic metres per hectare, and at Méry-Pierrelaye 30,189 cubic metres. There is obviously a limit to the quantity of sewage the land is capable of absorbing, and the Paris sanitary engineers have therefore been experimenting with all sorts of methods for dealing with the surplus sewage, notably by the construction of septic tanks at Triel. The Commission does not believe, however, that under present conditions any further installations of septic tanks will be tolerated. It considers that the filtration through soil, if properly carried out, is superior to any bacterial process, and it is of the opinion that the only way by which the Municipal Council of Paris can fulfil its undertaking to discharge no more sewage into the Seine is to create new sewage farms, which will necessarily have to be continuously extended. Unfortunately, apart from the expense, the establishment of sewage farms invariably meets with local opposition, and it is probable that they would have to be laid out at inconvenient distances from the City. Meanwhile the municipal engineers continue to seek a solution of this very difficult problem.

The Disposal of Household Refuse. THE difficulty experienced in most households in disposing of the usual kitchen refuse is well known. The only wholesome method of getting rid of refuse from kitchen or elsewhere is that of cremation—burial is, as a rule, no good, even if everyone had a burial-ground in the shape of a garden. But where and how? The large coal range is gradually but surely disappearing from the kitchen of to-day. If cooking is done without solid fuel—by the gas cooker or any other means—the problem of getting rid of rubbish before it decays and becomes a danger has to be taken seriously for the sake of everybody in the house and outside it. One method which is perfectly sanitary as well as economical is by the use of a small coke stove which will heat water either for household use or radiators for warming passages and halls, or for both. Another and less known method in England—though it has for some time been common in America—is by means of a specially constructed gas-heated refuse destructor (or incinerator, as it is sometimes called), into which rubbish of any sort can be put, the gas turned on for a few minutes and turned out again the moment the rubbish is thoroughly charred. In either case the unwholesomeness of the dustbin, as we find it now, would be done away with. There can be very little doubt that a good deal of disease is spread by the present method and by the carts in which the contents of the bins are removed.

Fire Protection at Sea. THE serious conflagrations which have occurred on ships at sea of late bring up the question of the precautions which should be taken to guard against this contingency. It should be possible to arrange automatic alarms and sprinklers on modern ships as well as this is done in buildings. In fact a small number of vessels are already so fitted up, the New England Navigation Company having provided several of their ships with the "Grinnell" automatic alarms and sprinklers for some years.

New Premises for the Chartered Bank of India, Australia, and China, Singapore.
Messrs. Swan & Maclaren, Architects, Singapore.

THE BUILDING TRADE.

THE TRADE DISPUTES ACT AND LABOUR UNION CONSPIRACY.

A MASS meeting of representatives of employers' associations throughout the country was held on Wednesday last week at the Westminster Palace Hotel under the auspices of the Employers' Parliamentary Council to press upon the Government the need for an amendment of the Trade Disputes Act (1906). Sir Richard Temple presided, and there was a large attendance.

The Chairman, in his opening speech, said that the meeting had been called together to give expression to certain views with regard to the state of things that had arisen out of the passing of the Trade Disputes Act. The Employers' Parliamentary Council had ample evidence before it that the resolution which had been drafted reflected the general opinion of all in this country who loved order and were law-abiding. Recent events in Dublin, at Leeds, in London, and High Wycombe, to say nothing of what had happened in South Africa of late demonstrated the great evils due to treating labour unions as bodies specially privileged to do wrong and to act in a manner which was not permitted to anyone else. It seemed to him to be clear that power had got into the wrong hands, and into the hands of men who had shown themselves capable of taking full advantage of the position in which they had been placed and the fact that it was possible for trade unions to engage in an organised conspiracy against the welfare of the whole community by holding up the means of communication and transport showed that we were not living in a properly-governed country. Parliament, in passing the Trade Disputes Act, bowed the knee to an organised minority represented in the present case by the trade unions. The wage-earners in this country who were outside the unions outnumbered the members of the unions themselves in the proportion of eight to one, and yet the unions had been able to trample with impunity upon the lives and liberties of that huge majority for the simple reason that they were not legally responsible for anything they chose to do or for any wrong they chose to inflict. That showed what organisation could do. It was therefore clear that they who represented the vast majority of workers in this country must organise also. The resolution demanded that the Government should institute an inquiry into the working of the Trade Disputes Act with a view to determining how the law might be amended in the interests of public order, of industrial peace, and personal freedom. No one in the face of the facts, which were notorious, could contend that a demand of that nature was either unreasonable or uncalled for. He believed the various speakers would be able to show good cause for strong determined action to put an end to the intolerable state of things at present existing.

Mr. Cuthbert Laws (Shipping Federation) proposed the following resolution:—

"That this meeting of representatives of Central Associations of Employers connected with the various industries in the United Kingdom, in view of the continued and growing menace to personal freedom, public order, and industrial peace, due to the provisions of the Trade Disputes Act, 1906, calls upon his Majesty's Government to set up an inquiry into the working and the effects of the Act, and to determine

(1) Whether the present unlimited area in which picketing in unlimited numbers may be carried on should not be restricted and the number of pickets regulated by statute;

(2) Whether combinations for disorganising trading and social conditions should not be made unlawful; and

(3) Whether it is not of national interest that all unions should be subjected to the ordinary law of the land and made responsible, like all other classes, for their actions."

He remarked that the resolution did not seem to him sufficiently to recognise the urgency of the need which existed for a reform of the laws governing trade disputes. It asked for an inquiry into the working of the Act. Frankly, he begrudged the time which would be wasted in inquiring into that which was perfectly plain and obvious. The Government had already in their possession abundant evidence showing the working of the Act in the history of the strikes which had taken place since the Act had been in force. During the shipping strike some of the seaport towns were absolutely at the mercy of mob law. In the London transport strike his Majesty's mails were only allowed to proceed along the streets by virtue of a permit signed by a strike leader. Last year the trade of Dublin was absolutely dislocated by a Syndicalist labour leader who called himself a trade unionist. Unfortunately there was no disease so difficult to cure as political ophthalmia. If inquiry was necessary, let it be an inquiry which should get at the real truth and not merely a device for shelving a disagreeable question. They might be told that the Act only legalised peaceful picketing; but those who had had anything to do with strikes knew that such a thing as peaceful picketing did not exist. They objected to that form of trade union conspiracy which sought to utilise a general strike, not for the purpose of improving conditions and wages, but for the purpose of subverting the existing social order.

Mr. Frederick Higgs (National Federation of Building Trade Employers) said he had much pleasure in seconding the resolution in the unavoidable absence of Mr. Thomas, the President of the National Federation. As representing the building trade, which employed a large number of men up and down the country, he wished to emphasise all that had been said as to the necessity for amending the Trade Disputes Act. In the building trade, unfortunately or fortunately, the proportion of trade unionists and non-unionists was nearly one to one, and they had suffered a great deal from labour disputes and from the Trade Disputes Act. They did not see why trade unions should be in any exceptional position in respect to liability for their actions as compared with any other individual or body of men. As most of them were aware, there was a building strike or lock-out going on in London at the present time, and, speaking from knowledge, he could say that the employers had never before been so solid in their determination to fight this question out. They were more solid than they ever had been, even within the memory of his old friend, Mr. Shepherd, and he believed they were going to be the cause of the trade unions connected with their trade entering into some substantial bargain, which they would be able to enforce if necessary, which would ensure that the workmen observed the rules and regulations and agreements that had been made with them collectively, whether they were in their favour or whether they were not. Up to the present time they had observed those agreements which they thought suited them and disregarded those that were made for the protection of the masters, and the employers intended to stop that.

The resolution was supported by Mr. W. M. Murphy (Dublin), Mr. Walter Birch (High Wycombe Furniture Manufacturers' Federation), Mr. Stanley Low (Federation of Master Printers and Allied Trades of the United Kingdom), Mr. Alex Fraser (President of the Scottish Employers' Federation of Iron and Steel Founders), and other speakers, and on being put to the meeting was carried unanimously.

THE LONDON DISPUTE.

THE conference between the employers' and operatives' associations concerned in this dispute took place on Monday last, but proved abortive. The representatives of the unions do not appear to have recognised yet that the past actions of their own members have so utterly discredited the executives of the unions that nothing short of real and substantial guarantees, of such a kind that the employers may feel sure that offences by individual members can and will be brought home to those who commit them, will receive consideration at the hands of the employers. In taking this attitude, the employers know that they have behind them the undivided support of their fellow-employers in the building trade, who regard the present issue as one in which the whole country is interested and one of such grave importance that no half-hearted remedies will meet the case, and who desire that the settlement, whenever it comes, should be on lines which are likely to meet with agreement and be applicable elsewhere, as well as in London, because the trouble which caused the present dispute is by no means confined to London.

There should be a frank recognition on the part of the trade unions that in future independent action by their individual members, of a character which infringes the spirit as well as the letter of any agreements entered into on their behalf by the union executives, shall be as far as possible made impossible, and, if such does occur, shall be punished promptly in such a way as will prevent its repetition, and that the ultimate penalty shall be exclusion from the union.

On the other hand, the employers should recognise that when a union, in order to carry out such agreements, resorts to this extreme penalty, the employers ought to refuse to employ any man so excluded, if called upon to do so by the union.

Some means are necessary also for satisfying the employers that the executives are empowered to exercise this control over their members. There may be considerable difficulty in doing this, because it is believed the trouble lately has been that the union executives were afraid to use the powers they are said to possess of fining members who act independently. They refused financial support to those who struck without authority, it is said, but that was not enough to secure the observance of the agreements the executives had entered into.

This is why the employers insisted upon individual undertakings by the men, and it is difficult to see how, in the circumstances, a trade union executive can be sufficiently empowered unless it requires from its members individual undertakings to observe the agreements entered into, as has been done in Dublin by the Labourers' Union.

It is said that the operative unions concerned, or some of them, would like a joint and several agreement binding all and each of them to observe the agreement. There is a good deal of wisdom in such a suggestion, since it would tend to discourage sectional action and favour united action, and it is sectional action which is responsible for so many sympathetic strikes; but the joint and several undertaking would not be of much value unless it was combined with that strengthening of the responsibility of every individual member to which reference has been made previously.

Anyhow, the employers have made it quite clear that it is for the unions to bring forward adequate guarantees. Otherwise it is useless to confer, and there for the moment the matter rests.

THE AGREED FORM OF CONTRACT:
COMING QUESTIONS.

THE present is a time when the *status quo* of many persons and practices is being challenged in many walks of life, so that it is perhaps hardly occasion for surprise that one of the reservations contained in the arbitration clause of the R.I.B.A. Form of Contract is being questioned in certain quarters.

The reservation in question is that which makes the architect sole arbitrator on matters concerning the materials and workmanship delivered for the purposes of the contract, and there is objection taken to this question being reserved from the purview of the arbitration clause. Why should there not lie an appeal to the arbitrator from the decision of the architect on the question as to whether the goods delivered are of the make and quality specified? What special qualifications as an expert on the question of quality can the ordinary run of practising architect have entitling him to assume an attitude of infallibility under the contract in regard to this matter? Does he not necessarily have to rely a good deal upon

the judgment and practical experience of his clerk of works on this question of the quality of goods supplied? In what respect is a clerk of works a better judge than the builder himself, whose assistant he may formerly have been? Such are the questions being asked.

Granted that all three may be expert to a more or less extent, and entitled to express an opinion, but, it is urged, not an opinion which cannot be appealed from if one of the parties feels that the verdict is against the weight of evidence.

It is not apparent why this reservation was made, but one may surmise that it was felt that the architect, as the creator of the design, was the best judge of what he wanted to realise his idea.

Admitting that to be true, there still remains the fact that, although the architect has described in his specification the materials and workmanship desired, words are often inadequate to express ideas clearly; therefore, the real question that arises when the architect condemns materials or workmanship is not whether they realise what he had in mind when creating his design, but whether they are substantially what is described in the specification.

Should there be a conflict between the idea in the mind of the architect and the expression he gave to it in words in the specification, it must be difficult for him to give a fair decision on the question as to whether the goods delivered are in accordance with the terms of it or not. In case he should fail to give a decision which is recognised by the contractor as fair, it is felt that a right of appeal under the arbitration clause should lie.

There may have been an idea also that a right of appeal of this kind opens the door to controversies which necessarily would have to be settled from time to time as the works proceed, and thus would lead to delays and much inconvenience.

While there may be a substratum of truth in this idea, it is probably not of so much importance as might be thought. To begin with, in the vast majority of cases the architect's decision would be accepted as final in this as it is in many other matters which are not reserved to his sole arbitrament. The last thing a contractor desires is to have resort to an arbitration. It is not the arbitration itself but the restraining influence, which the power to resort to it imposes, which is valuable to him. It is that influence also which confers force upon an architect's decisions, because the contractor cannot but realise that the architect must have felt sure of his ground in giving those decisions, knowing, as he does, that it may be called in question before an arbitrator.

Besides, it is only a matter of arranging for goods or materials to be described in the specification, by marks, brands, or well-defined classes—as firsts, seconds, etc.—and by fixing reasonable percentages of deviation from perfection, as, for example, in regard to the amount of sapwood admissible, to avoid most of the questions which arise as to whether the standard of quality prescribed is being lived up to by the contractor or not.

Nearly every dispute owes its origin to ambiguous description in the specification, and for this the contractor is not and ought not to be made responsible.

It is well recognised law that a person should not be the sole judge between himself and others where his own acts are in question, but where a dispute arises through inadequate description for which the architect is responsible he does, under this provision of the R.I.B.A. Contract, act in that capacity.

It would be interesting to have the views of architects on this question, which is likely to be pressed upon the R.I.B.A. for consideration in the near future. Another question that is coming forward is the position of subcontractors employed directly by the sole contractor. Hitherto, these useful and necessary persons have had no *locus standi* under the contract; although they have to be approved by the architect and have to execute their work to his satisfaction, they are ignored otherwise, especially in the matter of interim payments and final admeasurement and settlement. For a long time now they have been agitating with the sole contractors for recognition of what they conceive to be their rights as parties responsible for their part of the whole contract, and they have come to see that their position can hardly be put upon a really satisfactory footing unless they can obtain recognition on similar lines to the recognition accorded under Clause 20 of the R.I.B.A. Form of Contract to specialists and others, nominated by the architect.

The importance of this question is most realised in the provinces, especially in the North and Midlands, where a sole contractor rarely carries on more than one, two, or three branches of the building trade himself and relies upon subcontractors for the rest.

The sole contractors in those parts recognise that there are well-founded grievances of the subcontractors which ought to be remedied, but it is not easy to do so without conferring upon the latter a more privileged position than he ought to have.

Perhaps recognition under Clause 20 of the main contract would simplify these difficulties and enable them to be got over. It is worth consideration, anyhow. There does not appear to be any reason why architects should object to such recognition, and it may be that they will not. If there are any grounds of objection, however, it might clear the way to have them stated.

THE LONDON MASTER BUILDERS' ASSOCIATION: MONTHLY REPORT.

THE ordinary meeting of the Council was held on Thursday, the 19th inst., at the offices, Koh-i-Noor House, Kingsway, W.C., the President, Mr. Walter Lawrence, jun., being in the chair.

The Reports of the Special Council and Committees were read and adopted.

The result of three meetings of the Conciliation Board, held on the 13th inst., was reported. These Conciliation Board meetings were called to discuss alleged breaches of the Working Rule Agreements.

Complaints reached the Association that the plumbers, crane drivers, and mill sawyers and wood-cutting machinists, with whom working agreements are in existence, had been withdrawn from their employment during the past week. This Association, acting in conformity with the agreements, called the Conciliation Boards together for the purpose of considering the cases. There are three Boards, each composed of three employers and three operatives, and in each case the following resolution was carried unanimously:—

"That the action of the Society in calling out certain of their members without the question having been referred to the Conciliation Board is contrary to the meaning and intent of the conciliation rule of the working rule agreement existing between the London Master Builders' Association and the Society."

The meaning of this resolution is that the men admit that they have broken the agreements.

The position *re* the trade dispute was considered, and it was resolved, in response to a communication received from Mr. C. W. Bowerman, M.P., Secretary of the Parliamentary Committee of the Trades Union Congress, that his request for a Conference made on behalf of the various trade societies with whom the Association have or recently had working-rule agreements should be acceded to, and the date for the same was fixed for Monday, 23rd inst., at 3 p.m. A report of the proceedings at the Conference will be found under "Wages in the Building Trade," on p. 267.

The returns made by members of men signing the undertaking and resuming work were considered very satisfactory, more than 1,000 additional men having returned to work during the week.

New members were elected and further applications for membership received.

YORKSHIRE FEDERATION OF BUILDING TRADES EMPLOYERS.

THE annual dinner of the Yorkshire Federation of Building Trades Employers was held in the Great Northern Hotels, Leeds, recently. The President (Mr. W. T. Ledgard) occupied the chair, and among a large number of guests were Alderman C. H. Wilson, Alderman F. Kinder, Mr. A. J. Forsdike (Sheffield), Mr. L. Radcliffe (Huddersfield), Mr. A. G. White (London), Mr. T. E. Taylor (Bradford), Mr. A. E. Kirk, Mr. W. S. Braithwaite, and Mr. J. Davidson (Secretary).

Mr. L. Radcliffe proposed "The National Federation." Builders, he said, were concerned about the question of the carrying out and the responsibility for not carrying out of industrial agreements. Leeds had had a taste of this difficulty in the recent strike, and sympathetic and "lightning" strikes had brought about a deadlock in London. He believed that if trade unions were made responsible for the illegal acts of members and officials a retarding effect would be created.

Mr. A. G. White (Secretary of the National Federation), who responded, referred to the objects of that body, and proceeded to urge the necessity for the loyalty of employers and employed in respect of working agreements. Out of the disturbances in London he thought that there must arise some better means than had existed hitherto of bringing home to every individual member of a trade union his personal responsibility for the acts of his Executive Committee.

Mr. J. S. R. Phillips submitted the toast of "The Yorkshire Federation." Yorkshire, he said, was one of the most important divisions of the National Federation. The value of building plans in London in 1913, he found, was £2,152,945, while those in Yorkshire were valued at £2,350,217, so that Yorkshire, in that respect, was certainly ahead of the Metropolis. The Yorkshire plans also amounted to more than those for the whole of Scotland in the same period. So far as houses were concerned, however, the building trade had undoubtedly been bad of late years. That one fact stood out clearly, whatever was the cause of it. The slump had been felt mainly since 1908. Illuminating figures as to the number of houses erected in Leeds had been supplied to him, and from these he saw that in 1904 the houses built in the city numbered 2,925, in 1905 2,442, in 1906 1,748. About this time certain legislation came into operation. In 1907 1,135 houses were built, in 1908 919, in 1909 838, in 1910 564, in 1911 505, in 1912 350, and during the last year 220. He thought that those figures, whatever the explanation might be as regarded the rise in the prices of raw material, the difficulty to obtain money, and so forth, pointed to more than these. Not only in Leeds, but also in Sheffield, this great falling off in building had been experienced. In 1907 there were 2,035 houses erected there, and this number decreased consistently until in 1913 only 722 dwellings were built. The cost of materials, although affecting the building of new property, did not account for the slump in the value of property already built or on sale. This was a general condition, and could not be accounted for other than by the general feeling of insecurity, which had shown itself particularly in the building trade.

The President, in reply, said that recent legislation had very seriously affected the building trade; in many parts of the country business had almost been crushed out of existence. Their trade used to be looked upon as the next best investment to commerce, whereas now investors were figthing shy of the building trade. Before resuming his seat the President handed to Mr. J. W. Mallinson, who retired from that office at the end of last year, a resolution of thanks on vellum.

Mr. A. J. Forsdike, in proposing "The City and Trade of Leeds," remarked that the building trade was once successful, and they were living in the expectation that it would be again.

Alderman C. H. Wilson, in his reply, regretted the unfortunate state of housing property in Leeds and other cities. He thought that there would be a change before long, because two years ago there were 8,000 empty houses in Leeds, and this year that number had been reduced to 4,000. Two other important factors were that houses had been destroyed in insanitary areas and for the Infirmary extensions. Common sense, he believed, would ultimately prevail, so that money might be invested in property with a fair prospect of receiving interest.

Alderman F. Kinder, who also spoke to the toast, took a more optimistic view of the prospects of the building trade. He advised builders to get rid of the term "speculative," which gave the man in the street a wrong impression.

The toast of "Architects and Surveyors" was given by Mr. T. E. Taylor, and responded to by Mr. A. E. Kirk, who observed that the true position of the architect was as an arbitrator between the building owner and the builder, and by Mr. W. S. Braithwaite. "The Leeds Federation" was proposed by Mr. R. Finch (Hull), Mr. E. Airey (the President) replying.

WORKSHOPS, ETC., CLIFTON-STREET, E.C.

Offices, workshops, etc., for Messrs. Morrison & Austin are in course of erection in Clifton-street, Finsbury, from the designs of Messrs. Taperell & Haase, John-street, Adelphi. The general contractors are Messrs. Walter Lawrence & Son, Finsbury-circus, E.C. The steel-work will be by the Aston Construction Company, Eagle Wharf-road, Hoxton.

THE INCORPORATED CLERKS OF WORKS' ASSOCIATION.

Mr. H. Chatfeild Clarke, F.R.I.B.A., presided at the Holborn Restaurant on Saturday night over the thirty-first annual dinner of the Incorporated Clerks of Works' Association, and was supported by Messrs. Paul Waterhouse, F.R.I.B.A., W. Woodward, F.R.I.B.A., W. A. Pite, F.R.I.B.A., G. Corderoy, Colonel Preston, Mr. H. Holloway, and others.

Mr. W. H. Hookham proposed the toast of "The Architects and Surveyors," and expressed the hope that the pleasant relations which had always existed between these gentlemen and clerks of works would always be continued.

Mr. Paul Waterhouse, F.R.I.B.A., replied in a humorous speech for the architects. They might ask what an architect was, and he would tell them. In one word he was a manager. Of course he had to be a designer, and must manage to be a designer somehow. From the start to the finish he had got to manage something or somebody. He must manage without advertising to get a practice; must manage to secure a client, and it might be he had to manage not only the client but the client's wife—a job which probably the client himself was not up to. At any rate, he had to harmonise the views of these parties, which probably they had not been able to do in the past. Then the architect had to manage the accounts; to manage the London Building Act probably; to manage every intricacy of business; and, last of all, he had, without interfering with the delightful impression that the clerk of works was managing everything himself, to manage the clerk of works. The ancient Greeks were very fond of a dull kind of riddle—a riddle without any pun or joke in the middle of it, but just a tiresome kind of way of expressing a thing which would puzzle the hearers. They might have made a nice riddle in the ancient Greek style in relation to clerks of works, and they would have put it something like this:—"Who is that who is always a bystander, but never idle? Who is that who takes his wages from one man and his orders from another? Who is that who takes offence from nobody, takes offence at anything, and takes a hint from nobody? Who is that who takes his lunch on a drawing board, and his dinner once a year at the Holborn Restaurant? Who is that who takes his holiday the year after next? Answer: The clerk of works." But, seriously, clerks of works were a great deal to the architect, and he had made many friendships with them, which had been lasting.

Mr. G. Corderoy, replying for the surveyors, said, like Mr. Waterhouse, he would like to acknowledge the assistance he had always received from clerks of works. A witty architect once described a surveyor as one who must have a certain elasticity, because he had to act as buffer between the infuriated client, the furious architect, and the aggravated builder, and he had to steer a very careful course to promote the smooth and contented conclusion they all desired. There were three orders of mind which went to the successful completion of any building. The first was the architect, who was the creator of the conception; then the builder, who gave physical embodiment to the conception; and, thirdly, in all well-ordered contracts there should be a surveyor, to see that justice was done between the parties. With this co-operation they got a complete and finished result.

Mr. J. Tegg proposed the toast of "The Worshipful Company of Carpenters," and expressed the gratitude of the Association for the assistance the Association had rendered to them in finding them a habitation, and also in regard to the educational facilities they offered.

Colonel Preston briefly acknowledged the toast.

Mr. C. W. Denny gave "The Builders," who, he said, had left their mark in all the ages. They heard a great deal of the builders of the Middle Ages, but he ventured to say that builders of the present day could do as good work if they were allowed to. Unfortunately, at the present time, prices were cut down and there was hustling all along the line, and under such conditions they could not expect such good work to be done.

Mr. H. Holloway responded, and said the relationships between his firm and the clerks of works had always been of a happy character. Referring to the strike in the London building trade, he expressed the hope that the trouble would soon be over, but emphasised the vital necessity of the employer having control over his own work if industry was to be successfully carried on. He denied that there was any attempt on the part of the employers to smash the unions.

The Chairman gave the toast of "The Incorporated Clerks of Works' Association," and said that any success which had been achieved that night was due to Mr. Lake's hard work. The Association was one which architects appealed to when they wanted good men to assist them, and what architect could get on without a clerk of works? It appeared that there was little to be found out about them in the old days, but they did exist in the old chronicles dating back to Henry III., where they found that a clerk of works was employed at Windsor and afterwards at the Palace of Westminster. In the time of Henry VII. the clerk of works was an officer of the Royal household, and in later times the name seemed to be changed to that of surveyor. Until recently the City Surveyor of the Corporation of London was called the Clerk of Works. Architects were greatly indebted to clerks of works, whose office was not an easy one. It required an immense amount of tact and character and a great knowledge of building and construction. The work, both of the architect and clerk of works, was getting more and more difficult as time went on; but he still believed that a good practical artisan, who had been a foreman, was the best clerk of works. In connection with the Association they had a Benevolent Fund, and they were giving pensions to two old members. He hoped that all the members of the Association would join the fund, and his friends around him had promised to contribute to it. Although his speech was brief, he was absolutely sincere in wishing success to the Association.

Mr. W. Lake (President of the Association) briefly replied, and remarked that they had admitted a number of builders' merchants to the Association as hon. members, whose assistance helped some of the old members who had become too old to work. Clerks of works were not like some very successful architects, or some more successful builders, in being able to accumulate funds to live on. A man who worked for wages could not give much to a Benevolent Fund, and they did want to be in a position to do more in the way of assisting those who required help.

Mr. P. H. Henley submitted the toast of "The Chairman," and recalled the fact that twenty-eight years ago the Chairman's father presided over the dinner.

The Chairman said the best thing a man could have in life was a good father, and he had that, and did feel proud to occupy a position similar to that his father filled twenty-eight years ago. His father had the interest of the Association deeply at heart, as he himself had.

An excellent musical programme was carried out during the evening, and Mr. W. Woodward sang two songs.

SUBSTITUTES FOR TEAK.

From the Teak Report of Messrs. Denny, Mott, & Dickson, Ltd., we take the following:—

"The high cost of teak during recent years has naturally stimulated the search for a wood which might possess some of the special qualities which have made teak to be so appreciated for construction, and especially for work entailing the combination of wood and metal—teak alone being recognised as possessing the unctuous nature which prevents steel or iron corroding when in contact with it. No other wood can yet be claimed as possessing the special properties of teak, but some woods have been brought forward for experiment, and a loose habit is creeping in of affixing the word 'teak' to such woods—*e.g.*, yang teak, eng teak, Borneo teak. Consumers should be on their guard against such confusing nomenclature. Out of the above woods yang raised some hope of possessing the permanent greasy property of teak, but, although the tree is tapped for oil, experiments do not show any greasy quality of a permanent nature, whilst its repute in Siam for durability is not good. The timber merchant is only too keen that wood and not metal or cement compositions should displace teak in construction, but it is worse than useless that consumers should be confused by false nomenclature."

MANCHESTER BUILDING TRADES EXHIBITION.

The Manchester Building Trades Exhibition will open on Tuesday afternoon next, March 3. There is a formidable list of exhibits, representative of all that is modern and a good deal that is familiar in the building trades and the innumerable specialities connected with it. To the layman it must appear as though the modern building craft were a ceaselessly unravelling network of complexities, and the initiated must despair of keeping ahead of all the new developments, and welcome these exhibitions as a means of ranging in some sort of order the bewildering array of new things which crowd on his view.

Several features of this exhibition promise to be of more than usual interest. Some of the well-known cement manufacturers are to exhibit model buildings setting forth the possibilities of their material as applied to some of the problems which are pressing to-day. Several firms exhibit the most modern woodworking machinery in motion, and there will be several stands devoted to the latest products in manufactured stone and marble. In view of the great developments during recent years in the perfecting of paints and distempers, the numerous exhibits in this branch should prove particularly interesting, as should also the special displays of patent grates and stoves under working conditions. The sanitary section will be very extensive, and among many examples of improved apparatus will be an exhibition of drain-cleansing devices.

A glance at the catalogue promises an exhibition which will prove useful and interesting to the architect who is wearied with pamphlets and catalogues and samples all the year round, and who, in the deluge, cannot always sort the good from the bad. This will be a useful opportunity of comparison and examination well worth his attention.

WAGES IN THE BUILDING TRADE.

Barnsley.—The masons and bricklayers in this district are asking for increases in wages of 1½d. per hour (9d. to 10½d.).

Bridlington.—The bricklayers have given notice of a demand for an advance in wages of 1d. per hour (8d. to 9d.).

Colne Valley.—The employers in this district have received notices from the masons and bricklayers for advances in wages of 1d. per hour (9½d. to 10½d.).

Doncaster.—Notices for advances in wages have been given by the operatives as follows:—Masons, bricklayers, and plasterers, for 1d. per hour (9d. to 10d.); plumbers, for 1d. per hour (8½d. to 9½d.); and labourers, for 1d. per hour (6½d. to 7½d.).

Goole.—The carpenters and joiners are asking for an increase in wages of ½d. per hour (8½d. to 9d.).

Grimsby.—The joiners and labourers in this district are demanding increases in wages of 1d. per hour, the former from 8½d. to 9½d., and the latter from 6½d. to 7½d.

Hull.—The men employed in the building trade in this district have given the employers notice of the following demands for advances in wages:—Bricklayers, for 1d. per hour (9½d. to 10½d.); carpenters and joiners and plasterers, for ½d. per hour (9½d. to 10d.); masons, for ½d. per hour (9½d. to 10½d.); and labourers, for ½d. per hour (7d. to 7½d.).

London.—We reported in our last issue that a Conference had been arranged between the masters and men with a view to a settlement of the present dispute in the building trade. The Conference was held on Monday last, at 3 p.m., in the Essex Hall, Essex-street, Strand. Mr. Walter Lawrence, jun., President of the London Master Builders' Association, was in the chair, supported by a large number of members of the Council of the Association. Mr. S. Stennett was the leader on the men's side, and the following societies sent delegates:—Carpenters' and joiners' societies (four), masons (two), plumbers' societies (four), bricklayers (two), smiths and fitters (two), mill-sawyers and wood-cutting machinists (two), plasterers (two), crane-drivers (two), and builders' labourers' societies (three). After a three hours' sitting the Conference terminated without any settlement being arrived at. The official statement made by the President of the London Master Builders' Association on Monday evening was as follows:—"The Conference lasted three hours. There was an adjournment for half an hour to enable the representatives of the men's unions to consider what offer they should make to meet us in the matter of satisfactory guarantees that future agreements would be respected. On their return to the Conference-room the men's representatives made the following statement:—That the delegates assembled undertake to submit to their members the following:—That the trade unions agree to a clause being inserted in each agreement that any member, or members, violating any agreement entered into between representatives of the trade unions and the London Master Builders' Association shall be dealt with by the executives of such trade unions." Mr. Lawrence added:—"It was pointed out that the offer was perfectly useless to meet the difficulties that had arisen, and could be by no means regarded as a satisfactory guarantee. The Conference thereupon terminated. The offer, if it can be termed such, amounts to nothing—absolutely nothing. The executives of the trade unions have, of course, always been able to deal with their members if they wanted to, but that has not prevented the breaking of agreements. When the trade unions approach us with some reasonable proposal, we shall be glad to hear it. We have suggested a monetary guarantee for the keeping of contracts, because we cannot think of a better. We would like to hear a better. Contracts in the future must be kept."

Skipton.—The labourers are demanding an increase in wages of ½d. per hour (6d. to 6½d.).

Wakefield.—The bricklayers are asking for an advance in wages of 1d. per hour (9d. to 10d.), and the labourers for an advance of ½d. per hour (6½d. to 7d.)

York.—Notices of the following demands for increased wages have been given by the operatives in this district:—Masons, for 1d. per hour (9d. to 10d.); carpenters and joiners, for 1d. per hour (8½d. to 9½d.); and labourers, for 1d. per hour (6½d. to 7½d.).

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

THE following consents to applications under the London Building Acts are made by the Building Acts Committee of the London County Council:—

Lines of Frontage and Projections.

Camberwell, North.—Erection of a parish hall upon a site in Avondale-square, Camberwell, next to St. Philip's Church (Mr. H. P. B. Downing for the Rev. T. Neal).

Deptford.—Erection of a building upon the site of Nos. 277, 279, and 281, Queen's-road, Deptford (Mr. J. F. Parker for Messrs. H. Sterling & I. Cohen).

Holborn.—Erection of four oriel-windows to a building upon the site of Nos. 156 and 160, Shaftesbury-avenue, Holborn, next to Little Earl-street, and alterations at the said premises (Messrs. Houston & Houston for the Geneva Association of Hotel and Restaurant Employees).

Kennington.—Erection of a tower at a proposed United Methodist Church on the north-eastern side of Jeffreys-road, Clapham (Mr. W. B. Rees).

Norwood.—Extension of the time within which the erection of buildings on the north-western side of New Park-road, Brixton-hill, Norwood, was required to be commenced and completed, and extension of time within which such portions of Nos. 4 and 22, New Park-road, as abut upon Felsberg-road and Doverfield-road, were required to be set back so as to make the widths of such roads not less than 40 ft.

St. George, Hanover-square.—Erection of bay-windows and a porch at No. 35, Curzon-street, Mayfair (Mr G. A. Hall for Lord Curzon).

Wandsworth.—Erection of porches and bay-windows to proposed houses in Burntwood-lane, and in the streets intended to be called Marham-gardens, Lyminge-gardens, Lyford-road (in continuation), and Collamore-avenue, Wandsworth Common (Mr. A. Dawkins for Mr. R. B. Mason).

Width of Way.

Wandsworth.—Erection of a building at the rear of Nos. 83, 85, 87, and 89, New Park-road, Brixton (Messrs. Emden, Egan, & Co. for the Westmore Syndicate, Ltd.).

Width of Way and Lines of Frontage.

Brixton.—Erection of a building to abut upon Brixton-road, Stockwell-road, Stockwell-avenue, and Pilcher-place, Brixton (Mr. H. Knight for Messrs. Quin & Axtens).

Deviation from Certified Plans.

Kensington, South.—Deviations from the plan certified by the District Surveyor, so far as relates to a building upon the site of Nos. 9 and 10, Cornwall-mews, and the site of the previously existing rear additions of No. 16, Cornwall-gardens, Kensington (Mr. G. Phillips for Miss Holmes).

Formation of Streets.

Lewisham.—Order to Mr. E. Van Putten sanctioning the formation or laying-out of a new street for carriage traffic in continuation of Limes-grove, Lewisham, to connect such street with Clarendon-road (for Lewisham Metropolitan Borough Council).

Conversion of Buildings.

Clapham.—Alterations at Nos. 34 and 36, High-street, Clapham (Mr. J. W. Stevens for Mrs. G. W. Allebone).

Cubical Extent.

Camberwell, North.—Additional cubical extent in respect of a proposed garage for the London General Omnibus Company, Warner-road, Camberwell (Mr. J. E. Ashby for the London General Omnibus Company, Ltd.).

City of London.—Deviation from the plans approved under sect. 17 of the London County Council (General Powers) Act, 1908, for additional cubical extent at Carmelite House on the southern side of Tallis-street, City, abutting upon the western side of Carmelite-street, so far as relates to the erection of an additional two stories in height at the second-floor level across the internal lighting area.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans passed by T.C.:—Garage at the rear of 106, Queen's-road, for Miss Catherine Center, per Messrs. Wilsons & Walker, architects; garage on the south side of Balnagask-road for Mr. Joseph Robertson, fish-curer, per Messrs. Brown & Watt, architects; alterations in connection with the premises, 74-78, Shiprow, for Mr. J. M. M'Donald, slater, per Mr. W. E. Gauld architect; auction mart on the south side of Powis-terrace, near Belmont-road, for Messrs. Reith & Anderson, cattle salesmen, per Mr Clement George, architect.

Aberystwyth.—Plans passed by T.C.:—Additions to Mr. Rowland Prys's house in Banadl-road; of new buildings in North-road by Mr. Charles Evans; and of new houses in Dinas-terrace by Messrs. Edwards Brothers.

Amble.—Plans passed by U.D.C.:—For house on Hope House Estate for Mr. J. E. O'Keefe; and two houses for Messrs. R. Carse & Son.

Athlone.—On the recommendation of Mr. Bergin, Engineer, the T.C. have decided to apply for a loan of £4,000 to improve and extend the water supply.

Basingstoke.—The T.C. have passed plans of the following buildings:—Stable in Wortting-road for Mr. Oliver; four houses in Penrith-road for Messrs. Blunden & Oliver; additions to house on Kempshott Village Estate for Mr. Rivers.

Bedford.—Plans passed by T.C.:—Extensions to workshops, Houghton-road, for the Bedford Engineering Company; twelve houses, Pearcey-road for Mr. H. Burridge; house, Beverley-crescent, for Mr. A. Richardson.

Bexhill.—A plan for a Salvation Army hall is before the Council.

Binley.—Efforts are being made to raise funds to build a church to serve the colliery village of Binley. As yet no definite plans have been agreed upon as to the erection, but a site has already been given by Lord Craven and the colliery company.

Bognor.—The Board of Education have approved of the site on which the West Sussex E.C. propose to erect a new school.

Brightlingsea.—Plans passed by U.D.C.:—House at 52, Church-road, for Mr. A. J. Aldous; house at 21, Church-road, for Mr. J. Ball; house at 2 and 4, Ladysmith-avenue, for Mrs. E. Lake; and office for the Anglo-Swedish Preserving Company, Ltd., at 141, Lime-street.

Bristol.—The erection of a drill hall, messrooms, billiard and reading rooms, and stores for the 4th Battalion Gloucester Regiment in Old Market-street, at the old sugar refinery, has been approved.

Bromsgrove.—The Worcestershire E.C. has purchased a site in Watt Close for a mixed and infants' school.

Buckhaven.—The T.C. have decided to erect thirty dwelling-houses.

Buckhurst Hill.—The U.D.C. have approved the plans, etc., prepared by the Surveyor for street improvements in Queen's-road, King's-place, King's-avenue, Stag-lane, Russell-road, and Gladstone-road, and agreed that application be made to the L.G.B. to sanction a loan of £850.

Byfleet.—Mr. F. C. Stoop has offered to extend the village hall.

Cambridge.—The Borough Surveyor has been asked to prepare plans for twelve six-roomed cottages in Stanley-road and for six-roomed cottages on the Victoria-road site.

Cannock.—Plans have been approved for the erection of twelve houses in pairs at Huntington for the Littleton Collieries Company, Ltd.

Carno.—Mr. David Davies, M.P., has offered to give a public hall on condition that the site is found by the inhabitants.

Chard.—The B.G. have referred the question of providing a new infirmary and library to a Special Committee.

Cheadle.—Plans passed by U.D.C.:—Mr. C. Darrah, for a detached house at Schools-hill; Mr. John Hawkins, for alterations and additions to "Brookside," Finney-lane; Mr. J. Marsland, for three pairs of semi-detached cottages in Hulme Hall-road; Mr. T. West, for two pairs of semi-detached cottages in Seymour-road; the Committee of the Warehousemen and Clerks' Orphan Schools, for an engineer's house; Mr. William Scholes, for alterations and additions to shop at Gatley-road.

Chester-le-Street.—The R.D.C. have decided to apply for sanction to borrow £12,200 for the erection of forty-seven houses at Washington. Plans have been passed for the conversion of the Oddfellows' Arms, Witton Gilbert, into three cottages.

Christchurch.—The T.C. have decided to apply to the L.G.B. for sanction to raise a further loan of £3,850 to complete their sewerage scheme.

* See also our list of Competitions, Contracts, etc., on page 278.

Crompton.—The U.D.C. have decided to apply to the L.G.B. for power to borrow £4,012 for a destructor.

Cuckfield.—The R.D.C. have decided that a scheme be prepared to sewer Handcross, Staplefield, and Slaugham, at an approximate estimate of £12,750, with additional cost for outfall and outfall work, a separate scheme being proposed for Warninglid.

Dover.—The Corporation propose carrying out various improvements at the Athletic Grounds at a cost of £500.

Eastbourne.—A new motor road to connect the three towns of Hastings, Bexhill, and Eastbourne was considered at a conference of local authorities held at Eastbourne. Estimates were ordered to be prepared for a road, 50 ft. wide and 14 miles long, to connect the three towns.

Eastry.—Plans passed by R.D.C.:—From Messrs. G. H. Denne & Son of a house at Sandwich Bay, Worth, for Mrs. Leverton Harris; from Mr. C. G. Townsend (Walmer) of a new house at Ripple Bottom, Sutton, for Mrs. E. Townsend.

Edinburgh.—The Dean of Guild Court has granted warrants to Messrs. James Dunbar, Ltd., for office, store, etc., at 78, Albion-road, and to the North British Railway Company for a subway near Brunstane Burn, Joppa.

Elland.—There is a boom in the building trade at this town. Plans have already been prepared for two new churches, a Sunday-school, and a factory. One of the churches proposed to be erected is that for which Canon Winter (Rector of Elland) received an anonymous gift of nearly £7,000. The other is for the United Methodists of the town, while the Sunday-school is in connection with St. Thomas's Church, Greetland. The proposed new factory is for Messrs. Thomas Casson & Brother, woollen manufacturers, Commercial Mills, Elland, who intend building premises in which is to be carried on the firm's dyeing and finishing trade. A number of cottage houses are also being erected.

Eton.—Plans passed by R.D.C.:—Alterations and additions to a laundry at Cliveden, Taplow, for Mr. W. W. Astor; additions to the "Nook," North Park, Gerrard's Cross, for Mrs. Hope-Smith; new house, Orchehill-avenue, Gerrard's Cross, for Mr. W. Best; new piggeries, etc., Boveney Wood Farm, Littleworth Common, for the Hall Barn Estate; new garage, Manor Cottage, Gerrard's Cross, for Mr. T. D. McMeekin; new cottage in grounds of Stoke Poges Golf Club; and new police cottage on the Bath-road, Taplow, for the Bucks Standing Joint Committee.

Fletton.—The Hunts E.C. are asking the C.C. to provide £1,800 for alterations and additions to the secondary school.

Grimsby.—That the Great Central Railway Company intend to proceed energetically with the development of their works at Grimsby is shown by the fact that in their estimate of further expenditure they contemplate spending this year £18,000 upon additional accommodation at Ashton-under-Lyne, Frodingham, and Grimsby, together with £20,300 subsequently; £2,000 upon the extension of the Grimsby light railway, and a further £500 afterwards; £15,000 upon lines leased at Immingham, and £90,000 upon the new fish dock at Grimsby, etc., before the end of the present year, and £450,000 until completion.

Guildford.—A L.G.B. inquiry has been held into the application of the T.C. for sanction to borrow £4,300 for the erection of twenty cottages for the working classes in Old Farm-road, Slyfield.

Gwyrfai.—The R.D.C. have resolved to purchase 2 acres of land from Sir C. H. Smith, on which it is suggested thirty-six houses shall be built.

Hayes.—Plans passed by U.D.C.:—Two houses, Neild-road, Mr. B. A. Boyton; one house, Tudor-road, Mr. G. Clayton; six houses, Austin-road, Mr. Mylon.

Heywood.—Plans passed by T.C.:—Messrs. Taylor & Livsey, ten houses, Olive-street; Mr. S. Hall, proposed workshop, 7, Hind Hill-street; Mr. J. Howarth, proposed extension, Simpson Hill House.

Holywell.—The R.D.C. have decided that the Inspector should prepare plans and estimates for the erection of workmen's dwellings on land at Mostyn which the Council have purchased from Lord Mostyn.

Horncastle.—The R.D.C. have passed plans for three new houses at Wragby for Mr. Frederick Creasey.

Houghton.—Plans passed by R.D.C.:—Two houses in Philadelphia-lane for Messrs. Liddell Brothers, and two cottages at Grindon for Col. E. Vaux.

Huntingdon.—The Hunts E.C. have sanctioned the proposed alterations at the Grammar School, which include the erection of an assembly hall.

Isle of Wight.—Plans passed by the R.D.C.:—Six cottages at Steyne-road, Bembridge, for Mr. W. Osborne; a curator's house in the Barton Burial-ground, Fairlee; and a house in Clatterford-road, Carisbrooke, for Mr. W. H. Reed.

Itchen.—The R.D.C. have passed plans for a temporary church building for the Rev. R. S. Buckenham.

Liversedge.—Plans passed by U.D.C.:—For a wire mill near their works by Messrs. E. & A. Smith & Co., and for new club premises at Hightown by the Liversedge (Hightown Ward) Working Men's Liberal Club.

Longridge.—The local authority have decided to erect a band pavilion in Tootle Height Park.

Lowestoft.—A L.G.B. inquiry has been held into the application of the T.C. to borrow £547 for the purpose of altering and extending the Royal Plain Lavatory.

Macclesfield.—The T.C. have approved the Borough Surveyor's plans for the reconstruction of the bridge over the Dams Brook in Oxford-road, and an estimate as to the cost of carrying

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur:—

—	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Newcastle	10	10	10	10	9½	10	9	6½	6½	6½
Sunderland	10	10	10	10	9½	9	9	6½	6½	6½
Darlington	9	9½	9	9½	9½	9	7½	6½	6½	6½
Stockton-on-Tees	9	10	9½	10	9½	9	8½	7	7	7½
Bradford	10	10	9	9½	9½	10	8½	7	7	7
Halifax	9½	9	8½	8½	8½	9	8½	6½	6½	6½
Hull	9½	9½	9	9½	9½	9½	8½	7	7	7
Leeds	10	10	9	9½	9½	9½	8	7	7	7
Sheffield	10	9½	9	9½	9½	9½	8½	6½	6½	6½
York	9	9½	8½	9½	9½	8½	7½	6½	6½	6½
London	11½	11½	11½	11½	—	1s.	9	7½	7½	7½
Brighton	8-0	8	8	—	—	—	—	—	—	—
Portsmouth	9	9	9	9	—	8	7½	6½	6½	6½
Southampton	8½	8½	8	8	—	9½	8½	6½	6½	6½
Maidstone	9½	9½	9½	9½	9	9½	7½	6	6	6
Bristol	9½	9½	9½	9½	—	9½	9	6½	6½	6½
Plymouth	9	9	9	9	—	9	7½	6	6	6
Bath	7½	7½	8	8	7½	7½	7	5–5½	5–5½	5–5½
Cheltenham	8½	8½	8½	8½	—	8½	7½	5½	5½	5½
Exeter	8	8	7½	7½	7½	7½	6½	5	5	5
Gloucester	7½	8½	8½	7½	7½	8½	7½	5½	5½	5½
Hereford	7½	8	7½	8	7½	7½	7	5	5	5
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Blackburn	10	10	9½	9	9½	9½	9½	6½	7	7
Bolton	10	10½	10	10½	9	10	9	—	—	—
Liverpool	11	11	11	10	10	10½	9½	6½	6½	6½
Manchester	10	10½	11	10	9	10	9½	6½	6½	7½
Oldham	10	10½	10	9½	9	10	9½	6	7	7½
Preston	9½	10	9½	9	8½	9	8½	5½	6	6
Birmingham	10	10	10	10½	9	10½	9	7	7	7
Derby	9½	9½	9	9	9	9	8	6½	6	6½
Leicester	9½	9½	9½	10½	9	9½	8	7	7	7½
Nottingham	10	9½	9½	10	9	9½	9	7	7	7½
Norwich	8	8	8	8	8	8	6½	5	5	5
Cambridge	9	8½	8½	9	8	9	7	5½	5½	5½
Oxford	9	8	8½	8½	8	8½	7	6	6	6½
Southend	9	9	9	9	Piece-work	9	7	6	6	6
St. Albans	9	9	9	10	8½	9	8	6	6	6
Grays	—	10	10	—	—	—	8½	6	7	7
Cardiff	9½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Swansea	9	9	9	9	8½	9	8½	6	6	6
Newport	9	9	9	9	9	8½	8½	6	6	6
Chatham	8	9	8½	9	9	8½	7	5½	5½	5½
Birkenhead	11	11	11	10½	10	10	9½	6½	6½	6½

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

out the work, including rebuilding of the wall on the west side of Oxford-road.

Midhurst.—The Surveyor of the R.D.C. has been instructed to complete the plans and specifications for the erection of workmen's cottages to be built at Milland.

New Mills.—A new Church Sunday-school is projected at Thornsett.

Newport (Isle of Wight).—The T.C. have passed plans for ten cottages to be erected in Cesar's-road by Mr. Q. F Quinton.

Northchapel.—The Board of Education have given their formal approval to the site of the proposed new Council school at Northchapel, and the West Sussex County Architect has been instructed to prepare plans for the school.

Norwich.—The General Purposes Committee are recommending the T.C. to erect municipal offices at a cost of £12,800.

Orrell.—Plans passed by U.D.C.:—Four houses in Smith's-road for Mr. F. Lyon; two houses in Smith's-road for Mr. P. Ashcroft; two houses in Orrell-road for Mr. Wm. Liptrot; four houses in Lodge-road for Mr. J. Sharrock; shop and house in Church-street for Mr. H. Ball.

Paddington.—The B.C. have decided to complete the purchase of land near Porchester-road at a cost of £16,000, upon which to erect public baths.

Rochford.—The R.D.C. have decided to purchase an acre of land at Cage Field, Great Stambridge, for housing purposes.

Romford.—Plans passed by R.D.C.:—Amended block plan and means of access to cemetery lodge, offices, and chapel on the east side of Eastbrook End-road, Dagenham, for the Ilford Park Cemetery Company, Ltd., and for two houses in Hainault-road, Chadwell Heath, for Mrs. M. A. Bell.

Ruislip-Northwood.—Plans passed by U.D.C.:—New roads and surface-water sewers, Northolt Junction, for Home Freeholds Company, submitted by Mr. Masson Smith; house, Kewferry-road, for Mr. J. Whittle, submitted by Mr. F. W. Bedford; house, Eastbury-road, for and submitted by Mr. H. Neal; two houses, Northolt Junction Estate, for Mrs. J. D'ammann, submitted by Mr. H. Vulliamy; two houses, Park Way, for Alderman Thompson, submitted by Messrs. Spalding & Meyers; two houses, Great Central-avenue and Primrose-garden, Northolt Junction Estate, for Home Freeholds Company, submitted by Mr. P. W. Hone; two houses, Hillard-road, for and submitted by Mr. F. E. Mott. The approval has been given to the plans for the new Presbyterian church at Northwood. The architect is Mr. Fred Rowntree, of Messrs. F. Rowntree & Son, of London, W.

St. Annes.—New Sunday-schools are about to be erected in connection with St. Annes Congregational Church, at a cost of £2,000. The existing premises, St. George's Hall, will be extended so as to provide eight classrooms, a lecture hall, a library, with ample kitchen, scullery, cloakroom, and lavatory accommodation. A new minister's vestry will also be added to the church.

Southampton.—The Public Libraries Committee have decided on a site adjoining the Portswood Palladium for a new public library.

Spalding.—The R.D.C. have decided to apply to the L.G.B. for permission to borrow £1,450 for six cottages at Surfleet and £1,680 for eight at Quadring.

Sunninghill.—The Windsor R.D.C. have passed plans for a cottage for Colonel McClintock.

Swanwick.—Mr. R. C. A. Palmer-Morewood, owner of the Swanwick Collieries, has now offered to build an institute at his own expense.

Ware.—The U.D.C. have approved of the Surveyor's specifications for making-up Bowling and Jeffries roads.

Westhampnett.—The R.D.C. have decided to erect six cottages at a cost not exceeding £1,000, exclusive of land. They have also resolved to acquire a site at Summersdale for an isolation hospital.

Wrotham.—Plans by Mr. J. Allcorn for six cottages at Plaxtol, and by Mr. R. Gardner for a motor garage at Sheet-hill, have been passed by the U.D.C.

GENERAL BUILDING NEWS.

SHOWROOMS, ETC., PICCADILLY, W.

Nos. 65-66, Piccadilly are being altered and adapted as showrooms, etc., for the Charron Motor-Car Company. The architect is Mr. E. Keynes Purchase, F.R.I.B.A., Maddox-street, W., and the general contractor is Mr. T. Stevens, South Molton-street, W. The heating will be by Messrs. Richard Crittall & Co., Ltd., Wardour-street, W., and the electric lighting by Messrs. Smeeton & Page, Queen Victoria-street, E.C. The parquet flooring will be by Messrs. Vertigan & Co., Victoria-street, Westminster, the decorations by Messrs. H. G. Lancaster & Co., Conduit-street, W., and the shop front by Messrs. Courtney, Pope, & Co., Ltd., King's Cross.

NO. 32, SACKVILLE-STREET, W.

No. 32, Sackville-street, Piccadilly, is being modernised, with a showroom on the ground floor and offices over. The architect is Mr. E. Keynes Purchase, F.R.I.B.A., Maddox-street, W., and the general contractors are Messrs. H. & E. Lea, Brewer-street, W. The steelwork is by Messrs. H. Young & Co., Ltd., the Nine Elms Ironworks, S.W., and the carving is by Mr. W. Hearn, Kennington, S.E.

DWELLINGS, CAMBERWELL, S.E.

Working-class dwellings are to be erected in Warner-road, Camberwell, by the Samuel Lewis Trustees. There will be seventeen blocks, each five stories high, and comprising three hundred tenements. The cost will be £71,000, exclusive of land. Each tenement will have a bathroom and a hot-water supply from the living-room or kitchen fire. A drying-room block will be provided, with other conveniences. The architects are Messrs. Joseph & Smithem, Queen-street, Cheapside.

SEWERAGE WORKS, PENCOED, GLAMORGANSHIRE.

A Local Government Board Inquiry was held on the 5th inst. by Mr. A. G. Drury into an application for a loan of £10,750 for sewerage and sewage disposal works. The engineer, Mr. T. J. Moss-Flower, of Westminster and Bristol, explained the scheme, which involves the construction of some 6 miles of sewers, with railway and stream crossings, sewage disposal works, pumping plant in duplicate, and disposal of sewage by percolating filters.

TRADE NEWS.

Messrs. Mather & Platt, Ltd., of Manchester, have recently completed three large schemes of water supply and filtration, and have in hand several other contracts of a similar nature. In 1912 they carried out a scheme of water supply and filtration at Loxley Valley for the Sheffield Corporation, the installation supplying the town with about 7,000,000 gallons of pure water per day. The firm has also completed an extension of the water supply and filtration plant for the Rhymney and Aber Valleys Gas and Water Company, while last year they completed an installation of four of their mechanical filters for the Fraserburgh Corporation, and have recently erected an additional two filters of the same size, viz., 8 ft. diameter. In addition, Messrs. Mather & Platt have in hand several contracts for abroad, including six filters for India and three for South Africa.

An interesting system of fire protection has been adopted at the new offices of the Pearl Life Assurance Company, High Holborn. The company has its own well for water supply, and the water thus obtained is pumped into a large underground tank. In order to obtain the necessary pressure for fire-protection purposes, a Merryweather electrically driven "Hatfield" pump has been fitted in the basement of the building. This pump takes its supply of water from the aforementioned tank and delivers into a service of firemain piping, which is carried up to the various floors and is fitted with hydrants at suitable points. The firemain piping rises to the seventh-floor level and is connected to another tank placed at that level. A special feature of the installation lies in the fact that automatic starting arrangements are provided, so that on an outbreak of fire all that is necessary is to run out the length of hose nearest the fire and turn on a hydrant, when the electric "Hatfield" pump would immediately start up and provide ample pressure for getting powerful jets to work.

Much at one time and another has been said and written about the savings in time and money claimed by motor vehicles over the old horse-drawn lurries, and it may now be said that the former have established themselves and are gradually superseding the latter. There are two points, however, to be weighed by a firm if it is to obtain the maximum of benefit from the expenditure involved. Firstly, a motor vehicle must be well made and be so constructed that it will withstand any strain that is likely to be put upon it. A good lurry continues to run long after its allotted span of life. Then, again, a motor must be sold at a reasonable price, or otherwise its earning capacity is heavily taxed by the interest on the capital outlay. Among motor-lurries which meet these requirements may be mentioned the Belsize heavy motor-lurry. The 3-ton lurry has great wearing qualities, and the chassis price is £575, while a substantial body may be had for £55. Arrangements have been made by the Bentinck Motor Supply, Ltd., Spring-gardens, Manchester, to supply any make of Belsize cars on the gradual payment system; and in the case of this 3-tonner the lurry is delivered on receipt of 25 per cent. of the purchase price, £157 10s.

Messrs. Kerner-Greenwood & Co., of King's Lynn, have issued the first of a series of five circulars which will contain descriptions of various works in which their powder, "Pudlo," has been used. All these circulars will show the architectural beauties of Lynn and neighbourhood, and the first circular gives an interesting view of Lynn, showing the South Gate from the Moat. Architects may obtain copies of these circulars, which are very neatly got up, from Messrs. Kerner-Greenwood.

The Richard Murray Hospital, Blackhill, is being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues, patent Manchester grates, patent exhaust and special inlet ventilators, by Messrs. E. H. Shor'and & Brother, Ltd., of Failsworth, Manchester.

Boyle's latest patent "air-pump" ventilators have been applied to new police-court, Great Marlborough-street, London, W.

THE CARPENTERS' HALL LECTURES:

THE CASE FOR THE JERRY-BUILDER.*

IT is entirely owing to the benevolence and charity of the Carpenters' Company, a benevolence and charity which they in common with other of the great City companies show to all mankind even in these latter days of spoliation, that I am allowed to address you to-night.

For these lectures are primarily intended to encourage those who are endeavouring to learn the meaning and importance of the crafts connected with building, whereas the title of my paper suggests that I am holding a brief for the antithesis of all you are taught to admire and venerate.

But my purpose is hardly this; it is rather that of the legal advisers of the Crown who, while admitting that a crime has been committed, believe that the convicted felon has been condemned on evidence which is false or insufficient, and who therefore order that the case should be retried in order that the actual truth may come to light and justice may be done.

For the purpose of my argument I want you to forget for the time being that you are travellers along the straight and narrow way which leads to perfect truth and understanding of the arts and crafts of building. For an hour I ask you to put yourselves in the place of an average section of that great British public who have no special knowledge of architecture or building, and to consider the conclusions I have come to as to the position which building holds in the estimation of the average citizen. Now you will all admit that a supply must presuppose a demand, and you must consider what the demand of the average man is in relation to buildings. It may be that I shall not be able to clear the jerry-builder from the stains which disfigure his character, but I may be able to show you that if he commits crimes he is probably more unconscious of their nature than those who are, in legal language, accessories after the fact because they take what he gives them. If these latter have, as in many cases they certainly have, the critical taste which enables them to condemn the work they take, they are, I claim, the worse offenders.

Now, architecture has been said to be among the surest indices of the extent and nature of a nation's civilisation, and if the vast majority of the inhabitants of the greatest Empire the world has seen inhabit jerry-built houses of one kind or another we should be able to deduce facts as to the nature and extent of that civilisation from a study of the dwellings which we own or rent.

You may, however, say at the outset that you are not free agents and are compelled by necessity to take what you can get, or it may be said you are unable to take risks, and, if either of these two propositions can be proved, my whole argument falls to the ground; but I wish to ask you whether, after considering facts, you can safely say this is the case.

Most of us have convictions which we act on unhesitatingly and gladly if they square with our inclinations, but if they result in forcing us to make sacrifices or place us in difficulties we often choose the line of least resistance and form new theories to accord with that point of view. Many of us go through life governed by theories which are the purest opportunism, and I believe the easiest of all mental attitudes is that of self-deception.

The average man having the opportunity of taking a jerry-builder's house for a certain rent, or a better built and designed one which will cost him, say, £20 more, will say that the latter represents a sum beyond his means, yet the same man will spend more than the difference in some form of pleasure or occupation from which he derives satisfaction. I do not say he is right or wrong in taking one course rather than the other, but I do say that our typical man places a higher value on what he elects to spend his money on than he does on good architecture, craftsmanship, or building, as you may prefer to put it.

Again, in another case you will be told that a man does not build for himself because of the risk it entails. Now men take risks every day for objects to which they attach sufficient importance. Marriage is such a risk, and may be termed, in the language of the Chicago Wheat Market, a "speculation in futures." On either side there may be disenchantment, there may be divergence of views, ill-health, the forming of new relationships which make the maintenance of the *status quo* an acrobatic feat—in a word, the thousand and one contingencies which form the stock-in-trade of our novelists and playwrights. Each one of us may become the centre of a tragedy or the actor in a drama, yet in spite of these risks how many of us take to heart *Punch's* advice to those about to marry?

Therefore it is obvious that man is not averse to taking risks compared to which a financially unremunerative risk in bricks and mortar is the merest bagatelle. He loses much but cannot lose all in the former case, while in the latter he may lose all that makes life endurable. I am conscious that I am comparing two things of very different magnitude and importance; all I wish to impress on you is the fallacy of the argument that you cannot take risks.

But in smaller matters you take risks constantly. You may be fond of climbing, and for the enjoyment of an exhilarating form of exercise alone you will take risks of life and death. The same applies to hunting, yachting, and many other pastimes which can be enumerated.

But when it comes to bricks and mortar the average man prefers to let some one else pick the chestnuts out of the fire, and the result of this wish has been to introduce on to our stage the character we call the jerry-builder, whom it will be sufficient to define as the man who builds for profit in a flimsy and unsubstantial way and who is a product of the last century.

The careful and painstaking labour of critics has changed our views of the character and worth of many of the great men and women of the past. We learn, for example, that Lucrezia Borgia instead of being a monster of iniquity was an amiable and accomplished woman who was greatly revered for her charity and virtues, and who finally died in the odour of sanctity, while a critical investigation of the character of Elizabeth robs the memory of the great Queen from much of the romance with which we surrounded her in our childhood. Such changed points of view partly result from more perfect knowledge of the facts which gives rise to the expression that "no man is a hero to his own valet," but they are in other cases arise from our being radically misinformed.

There is a great difference between speculative building in general and the species of speculative building to which the term "jerry" is usually applied, and it is with this latter alone I propose to deal, and I further propose to illustrate and deal with that section of the jerry-builder's work in which he caters for that geat middle class which is said to be the pride of our country. I do this for two reasons, the first being that the very poorest classes of the community may be said to have little or no option, and, secondly, because I believe the middle classes are in reality the worst offenders, always assuming that an offence has been committed.

The end of the eighteenth and the beginning of the nineteenth century was the period when men who had money to invest realised that profitable use might be made of it by building not for their own occupancy, but for that of others. The Brothers Adam were among the early pioneers of the new movement, and many of the delightful houses we have in the Adelphi, Fitzroy-square, and other parts of London were erected by them to sell or let.

But, with the exception that these houses are generally simply and economically designed and constructed, there is little to distinguish them from the work of earlier periods.

It was recognised in the eighteenth and early part of the nineteenth century that even in districts outside towns the smaller houses could be most suitably built in groups, an arrangement which resulted in quiet and dignified design in which a minimum amount of decoration and ornament produced a maximum amount of effect.

Such combination, besides being economical from a point of view of construction by minimising the amount of external walling, did away with the gaps between closely adjacent houses—gaps which frequently do not exceed 8 ft. to 10 ft., and which are marked features in most of our suburban districts.

These gaps are difficult or impossible to use satisfactorily; they are usually windy and sunless, while they only enable us to place windows where there is little light and no outlook.

The narrow front and back gardens of the suburban house are often more or less useless, and do not form a good equivalent for the common garden or open space of an earlier date; but they do show the lengths to which we are prepared to go to obtain that "privacy" which is the Englishman's pride. The conflict of design between closely adjacent buildings—another feature of our suburbs—was avoided by our forefathers' system of grouped houses.

It may be said that with each decade of the last century until we reach 1890 or 1900 the evil tendency of commonplace or vulgar design has been increasingly marked. The house of the early portion of the century was quiet and dignified in character, possessing marked architectural feeling. Step by step we lose interest and refinement till we reach the great stucco period of from 1840 to 1865, to which epoch most houses of districts like Belsize-park belong. Still a little dignity remains, and we have pillared porches which are more or less pleasingly designed, fairly well-proportioned window openings and cornices, and square and dignified rooms.

But from 1865 to 1875 or 1880 the quality of design rapidly deteriorates, and we get houses with bays of every description and form, gables and roofs of all pitches and materials, and the general medley of incongruous form in which the builder has so long indulged.

The idea of prettiness in design once discovered has been exploited to its extreme limit by the enterprising builder, and a walk up Fitzjohn's-avenue and many other of our newer suburban districts will convince anyone how infinite is the capacity of human invention for destroying peace of mind, and how easily most of us are satisfied with the worst that we are offered.

We return to a district like St. John's Wood with a sigh of relief. It is typical of the earlier years of the century, and, though there is a marked decline between it and the work of the preceding fifty years, we see little that is positively vulgar and hideous, and much of the work of contemporary dates in Paris is of still greater excellence.

The typical jerry-builder's house as we know it may now be described. We have brickwork of the crudest colours often accentuated by black mortar joints, Bath stone dressings round window and door openings as long as these front the road, the stonework is carved with a species of carving which happily for the world is of recent invention, and which might be executed by any systematic and industrious child without training. Then we get half-timber work carried out with ½-in. boards spiked or fixed to the surface of the wall and painted any colour you like, marvellously-designed roof ridges and gables of every conceivable variety, while a new and horrible type of window has been conceived on which, while the lower part of the sashes are filled with clear glass, the upper part is livened up with leaded glass of the crudest of colours and patterns. The sides of a porch will be lined with a dado of tiles the colour and patterns of which are a constant eyesore, and the builder finishes his joinery, obtained ready-made at the cheapest rates from Northern Europe and America, by painting it in two or three colours carefully selected to avoid all possible harmony of colour. The walls are covered with papers which deserve a volume to themselves, so marvellous and wonderful are their design and colouring. If the lady of the house has artistic tastes she will do a little herself and fill in the panels of the doors with representations of ferns, bulrushes, birds, butterflies, or other natural objects in quite original and unnatural colours. The chimney-piece and grate afford an opening for almost infinite ingenuity, as any manufacturer's catalogue will show us. You can have a shelf, mirror, or cupboard almost anywhere in these marvellous creations. You again get tiles round the grate of every conceivable shade and design, different coloured tiles in the hearth, and if you are lucky an ingeniously-arranged mixture of iron and brass in the grate twisted up into almost any shape you like. No less than five distinct suggestions of different styles can be found in one mantelpiece if you choose with care.

Then, too, we have a chance on the staircase, the balustrading and newels of which are usually fearfully and wonderfully made. I am

* The seventh of the course of lectures on "Arts Connected with Building," delivered by Mr. H. W. Wills, F.R.I.B.A., on February 18, at Carpenters' Hall, London-wall.

convinced that there are square miles of the suburban districts round London and other big towns in which you could safely offer a very large reward for the discovery of a well-designed baluster. I wish that I could have obtained some interior views of a few typical dwellings of the middle classes, but you must remember that an Englishman's home is a sacred spot to be known only by a few chosen intimates. The jerry-builder is a man who has a nice sense of honour and justice, and this prevents his giving to any part of the house except that fronting the main road the same treatment which he gives to that front. The side of the house may be more prominent than the front, but his sense of justice is unshaken and unshakable, and we get no stone dressings once we have passed the corner, and the cornices or other features stop short like a whipped dog.

Now let us consider for a moment the history of the man who gives us all this and let us study his *modus operandi*.

The jerry-builder is often at the start a good workman of more than usual enterprise and courage, and can earn good wages at his trade when work is to be had, but he has ambitions. He begins by renting a bit of land on a building lease and determines to build a house on it. He starts to work with the crudest of plans made by himself or obtained from a draughtsman for a few shillings—anything in fact which will be accepted by the local surveyor. He pays out of his small savings for the labour he employs, and gets his materials in accordance with the most enlightened modern practice in the cheapest market and partly on credit. He is clever in contriving to use the least amount of material that will satisfy the local by-laws, and as soon as he can he obtains a mortgage which enables him to find funds to complete the desirable residence, which is then placed in the hands of the local agents.

A young married couple, rich in hope and tempted by the reasonable rent, take it on a three years' agreement or a short lease, and our builder succeeds in selling the house to a speculator in property. With the money so obtained he starts again with a little more capital and rather better credit, and so goes on repeating the process till he acquires a firmer footing, finally ending as a substantial man of business, able and willing to spoil a few square miles of any suitable neighbourhood. His powers of evil increase with his means; his larger and more handsome residences are infinitely more painful to behold than his earlier efforts, for he has more scope without more education. He does his best to desecrate the land during six days in the week, assiduously attending a church or chapel on the seventh, where you may see him in a frock-coat, silk hat, and brightly-coloured tie, handing round the plate or perhaps singing in the choir. He has reason to thank his Maker for those chances which have been vouchsafed to him in a country distinguished by the height of its civilisation.

If we stop to think we shall recognise that the work of the jerry-builder, like the poor, is always with us. We may escape it on mountain-tops or on the moors, but elsewhere wherever man has needed accommodation in the last hundred years he has provided it. And man has seconded him, for all he has recognised is the necessity for getting accommodation without trouble; like a dog with a bone he has sought the nearest convenient shelter; like the dog he has been uninfluenced by considerations of beauty or of fitness; he has been otherwise and, we trust, more profitably occupied.

A few buildings only in most of our large towns are thought out thoroughly in design and are well built; the great mass of the many square miles of the land which are occupied by our towns have been built by speculative builders of various types, ranging from the man whose career we have sketched to the better-class speculator who caters for people of more complex and luxurious tastes who are able to pay for better building in which there is some approximation towards reasonable design.

Many of the cinema theatres recently erected are striking instances of the methods of the jerry-builder's work and truthful indications of the manner in which his mind works. We get a façade usually overloaded with very bad ornament and carried out in a mixture of materials primarily intended to act as a startling advertisement of a permanent character, and then if we can look behind the scene, in this case the parapet, we see a number of shed roofs which butt up somehow against that parapet at a much lower level. This is a good example of jerry-building as applied to town building.

The jerry-builder is at work, only at a slower pace (for the demand is not so great), in our villages, few of which are not honoured by his presence. The local chapels of various persuasions form an excellent field for the exercise of his skill. We get every combination of flat and steep roofs in the same structure, and galleries cut across traceried windows half-way up their height, showing a complete and lofty indifference to any attempt to make the exterior of the building express the internal divisions and arrangements.

We have unceasing evidence that there is absolutely no reason to believe that the near neighbourhood of the beautiful work of past centuries influences our minds, for the modern work in our old historical towns is no better than that which distinguishes the great manufacturing centres.

We are told by W. S. Gilbert that "hearts just as pure and fair may beat in Belgrave-square as in the lowly air of Seven Dials"; but in matters of building I am afraid it can hardly be said that the English people do not speak with an undivided voice which says clearly and unmistakably we have no interest in building except in so far as it is a necessary means for providing us with accommodation. It is no matter of classes or sections, but, if anything, I believe the middle classes are the greatest offenders.

I am not forgetting the excellent work which here and there is to be found in country and town and which is worthy of comparison with the best work of the past; but this is an exotic growth which bears the same relation to the remainder as two or three peas would bear to a large bucketful of sand.

The value which we place on good building is very noticeably shown in the manner in which a man who has built or inherited a good house usually makes any small addition which he wants. If a chimney smokes and it is considered advisable to raise it, the new work is usually carried out by the nearest small builder who is not paid to take down the existing chimney-head and raise it, but for the sake of cheapness adds on a few feet of roughly-built flues at the top of a different-coloured brick from that of the original building and surmounted possibly by an ugly cowl. If a bicycle house is wanted, a rough lean-to against the walls of the original building, roofed with corrugated-iron, will often be made to serve the purpose. I mention this as I believe rich and poor, bishop and workman, are usually alike in the manner in which they show their appreciation of good buildings and design.

Our towns are interesting and full of human interest on the weekday. If, however, we study them on Sunday, when that interest is for the most part lessened or absent, we are forced to come to the conclusion that the additions of the last hundred years have made them places which, were we not inured to their horrors by custom, we should shudder at.

Yet if we look at engravings of a hundred and fifty years ago we recognise that this was not always so. The old Georgian prints show us little which is not marked by good proportion and a measure of interest and a good deal of quiet dignity.

We have, it is true, the garden cities, which are a step towards something better, but they are too often settlements which rather suggest the segregation of cranks than a really healthy indication of the national desire for better things, and the point is that, numerous as they are becoming, they hardly leaven the residue, which remains untouched.

What I believe to be the root of the evil is not modern industrialism, as some assert, not the results of the invention of steam and machinery, not even the land laws, wicked as we are told they are, but rather a deliberate want of interest in certain fields of human industry.

Modern appliances and methods have not obliterated the desire of women for beautiful dresses, nor does the rapidly changing fashions prevent them taking trouble to obtain their desires. The modern painter often convinces us that many of the costumes of the present equal those of past ages in beauty, the fact being that women appreciate beautiful dressing and take the trouble to get it.

In the same manner most educated people have a taste for reading and instinctively exercise more or less selection; they do not fill their libraries with books bought *en bloc* irrespective of quality.

Yet when these same people are selecting the habitations they will occupy for years they will take what compared with dress might be called the fashions in vogue in Whitechapel or in the case of literature with the penny novelette of the servants' hall.

In other words, they are willing to accept in matters which touch art the results of ignorance, while in other fields of activity they exercise a reasonable amount of judgment.

Definite conclusions arrived at by processes of thinking are often unpleasant, and we find it easy to slip into a way of appropriating to ourselves the achievements and merits of our ancestors.

For instance, the English race has done much in the past and we pride ourselves on the fact; but do we often stop to think that the same people who financed the Continent in its struggle against Napoleon and which fought the Peninsular War and won Waterloo showed obvious signs of hysteria when Mafeking was relieved? And yet it is the latter people and not their forefathers who have to face the difficulties of to-day.

It may be that the progress of humanity in certain directions must be effected at the cost of retrogression in others; it may be that the appearance of town and country, craftsmanship, good building, and architecture are not worth an effort. I express no opinion as to this, but simply state the case as I see it, only saying that if you want them now you can have them as you had them in the past.

Gentlemen of the jury, my case for the jerry-builder is this. He gives you what you appear to want, dwellings which you can get without trouble, and which will shelter you while you think of and do better things. If he does so he is conducing to the greatest happiness of the greatest number, and is therefore a benefactor of mankind.

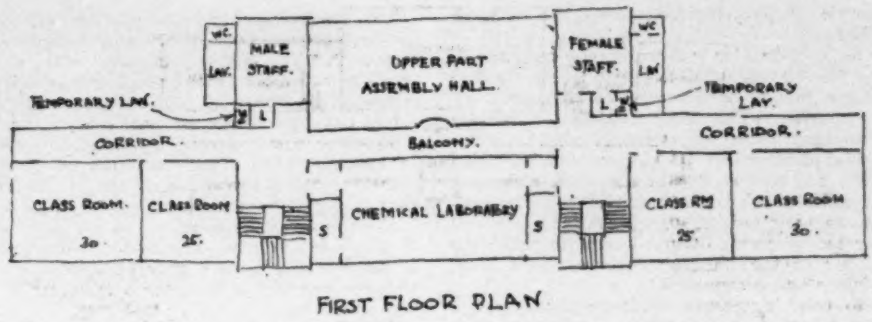
If, however, this is not so, and if his work and methods are bad, you, the people of modern England, are accessories after the fact, and are for the most part more blameable than he is, for, as I have demonstrated to you, he is a person who has not had the advantages and opportunities which have fallen to many of you.

You have all the powers of a free government; you have your councils in town and country; your will controls and selects the Members of the House of Commons; not even that most vicious of all bodies, the House of Lords, can stand in your way.

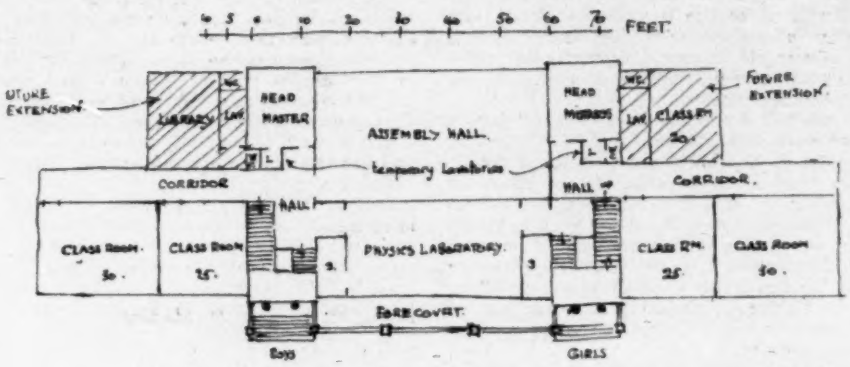
You can, on the other hand, do without the powers of government if you act by yourselves in the world of commerce. You can form companies which, properly organised and directed, will take up the work the jerry-builder is now doing, and will do what you want by supplying you with reasonably built and designed houses on terms; but if you are not satisfied with the *status quo* you have no case and cannot lay the blame at the door of the agent whom your indifference or desire—I do not know which it is—has created—the modern jerry-builder.

BATH SECONDARY SCHOOL COMPETITION.

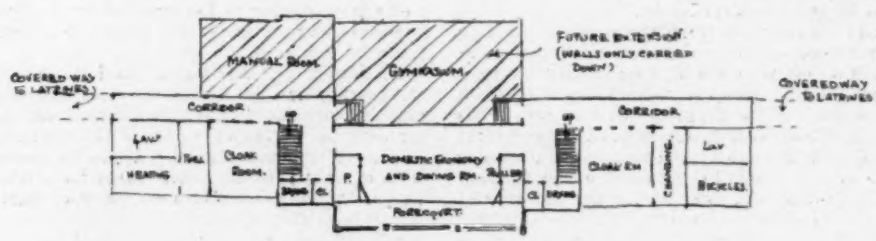
MR. HENRY T. HARE, F.R.I.B.A., has made his award as follows:—First premium, Messrs. Hickton & Farmer, Walsall; second premium, Messrs. McKewan & Madeley, Birmingham. Thus once again the provinces carry off the honours, and Mr. Hare's popularity as an assessor is further enhanced by the fact that no fewer than 103 designs have been submitted. The conditions, which, as might be expected, were carefully and lucidly compiled, asked for nine classrooms of varying sizes, manual department, domestic economy room (to be available for use as a dining-room), assembly hall (to be used as an art-room), chemical and physical laboratories, Committee-room and library, the usual teachers' rooms and cloakrooms, etc., and a gymnasium, suggested as a detached building of simpler construction. The problem set was somewhat removed from the ordinary by reason of the fact that the education authority proposed to limit the expenditure, in the first instance, to £8,000, and competitors were asked clearly to denote as future extensions such portions of their schemes that they considered could not be included in the amount at disposal. It was, moreover, left entirely to their discretion to suggest the departments to be first omitted. Although this privilege may, perhaps, have been



FIRST FLOOR PLAN



GROUND FLOOR PLAN



LOWER GROUND FLOOR PLAN

Bath Secondary School Competition:

First Premiated Design, by Messrs. Hickton & Farmer.

considered by some as a rather doubtful advantage, it gave, at any rate, entire freedom in respect to questions of planning and arrangement. The rapid fall of the site, both longitudinally and transversely, was also a matter for serious consideration.

The selected design is undoubtedly the most economical scheme submitted, and, as will be seen from the rough diagrams that we reproduce, gives the necessary accommodation in a simple form. The amount of building suggested as future extension is, moreover, considerably less than that proposed in the major portion of the remaining designs.

The whole of the cloak-room and lavatory accommodation is conveniently situated on the lower ground floor at either end of the building; but this arrangement, of course, entails the rooms at the higher, or eastern, end of the site being considerably below the ground level. This, however, is quite a small point. The domestic economy room, manual department, and gymnasium comprise the remaining accommodation at this level. The two latter are suggested as future extensions, the walls only being carried down for the time being. It is questionable whether a basement gymnasium is ever entirely satisfactory, and in this case the height given to it is only 13 ft. from floor to ceiling, which scarcely seems sufficient. At all events, the arrangement tends towards economy. The assembly hall is placed centrally and obtains the necessary height by being carried up two stories in height. Connection is gained between the end wings by means of a balcony or gallery. The classrooms throughout are given a south aspect, and the short corridors directly lighted. This is one of the few designs in the room in which the authors have had the courage to revert to the one-time favourite method of treating the hall as a passage way between the two end wings of the building, with the result that the corridor is reduced to an absolute minimum. The arrangement should perhaps suffice, but slight inconvenience might all the same arise when the assembly hall is used for the purposes of an art-room, as asked for in the conditions. And especially so as it is understood that the school will be worked by mixed classes. This will consequently entail a certain amount of cross traffic from the cloak-rooms.

The positions suggested for temporary staff lavatories rather spoil the staircase landings, and it certainly seems as if they might at once and for all take up their final resting-place with great advantage, and a comparatively small extra expenditure. These, however, are small blemishes in a capable and most economical plan, which undoubtedly deserves its position.

The elevations are treated in simple Renaissance, the grouping taking the form of a central feature flanked with pedimented pylons, the two end wings being treated with great restraint. There is all the material for an entirely successful façade, although various matters of detail will doubtless receive further attention and revision. It is just a point whether the authors have not been somewhat sanguine in respect to their estimate of cost. The general structure is cubed at 7d. per cubic foot, the lower ground floor and foundations at 6d., and the walls and excavations to the future extensions at 3½d., with an allowance of £300 for heating. Striking a general average, these figures cannot be described as high.

The second premiated design suffers in comparison with that previously described. It is of the usual corridor type of plan, the corridor running from end to end of the building, and the assembly hall placed centrally. Six classrooms with a southern aspect are disposed on the ground floor, and the two cloakrooms occurring immediately opposite to classrooms entirely prevents the isolation of these departments, to say nothing of the inconvenience that would be caused by crowding in front of the classroom doors at such times as the cloak-rooms were in use. The boys' and girls' entrances are placed at each end of the main corridor, with lavatories, somewhat small in size, opening immediately off the entrance porches, with the bicycle sheds conveniently arranged in close connection therewith, and the latrines connected up by covered ways. The manual-room and domestic economy room, proposed as future extensions, take the form of projecting wings towards the north and are well isolated. In fact, it becomes a question as to whether the domestic economy room, when devoted to the purposes of a dining-room, is not rather out of touch for general requirements.

The first-floor plan is devoted to well-arranged chemical and physical laboratories, with a southern aspect; three further classrooms, two facing south and the remaining one north; assistant masters' and mistresses' rooms; and the library and Committee-room. The basement or lower ground story is only utilised for the heating cellar, and the gymnasium denoted as a detached building, as suggested. The principal façade is a well-balanced and satisfactory composition that would have come out decidedly well in execution. The lower story is rusticated, the rustications terminating at the springer line of semi-circular windows. This, by the way, gives this type of window to all the ground-floor windows, which is scarcely in accordance with the usually recognised and accepted traditions, but, apart from this, the result is æsthetically satisfactory. The whole of the first-floor windows are, in this design, square-headed and simply and effectively handled with architraves, aprons, and square blocks to the window heads. Two nicely-handled end pavilions bind the composition well together, but scarcely seem in scale with the central feature, which is somewhat narrow and stilted in comparison, and scarcely emanates naturally from the plan. The estimate, as in the case of the winning design, again appears to us as somewhat inadequate, 6¼d. per foot being the figure given to bring the total within the amount at disposal, viz., £8,000. In these days of increased prices it is certainly open to doubt as to whether such prices would suffice.

To sum up, this is an efficient and workmanlike proposal, but there must have been many other schemes submitted that have run it very closely indeed.

Turning now to the unsuccessful designs, these for the most part and with the exception of the usual few and impossible projects, take either the form of a corridor running longitudinally with the various rooms placed on each side of it or a quadrangular type of plan.

The rapid fall of the site scarcely allowed the latter to be successfully negotiated, as, for the most part, it made short flights of steps necessary either in corridors or elsewhere, and these can never be considered desirable features in school planning.

In the face of such similarity no good purpose would be served by detailed descriptions of the various projects. Amongst the quadrangular efforts we mention the following as representing the average type:—

Mr. Willoughby Thomas, Cardiff—An attractive set of drawings, but steps necessitated in the corridors, and the internal lighting courts on the small side for this type of plan. Messrs. Mayor, Manchester—A similar type of school, giving a very large amount of accommodation for the sum at disposal, and the façades not attaining to the same standard as the plan. Mr. E. Cratney, Wallsend—Yet another quadrangular plan, but with quiet elevations that would have been entirely suitable to the locality.

Turning to the single-corridor type represented, Mr. S. B. Russell, London, submitted a conveniently-arranged plan, with entirely suitable and effectively-rendered elevations. Messrs. Castle & Warren, London—A plan with the cloakrooms conveniently arranged and isolated, but the teachers' rooms in too close connection with them, unless adequate supervision can be claimed as an advantage, and the gymnasium placed in the basement. The authors are to be congratulated upon their main elevation, which gives a delightfully-proportioned and simply-handled building of a Georgian type, and combining much dignity and strength.

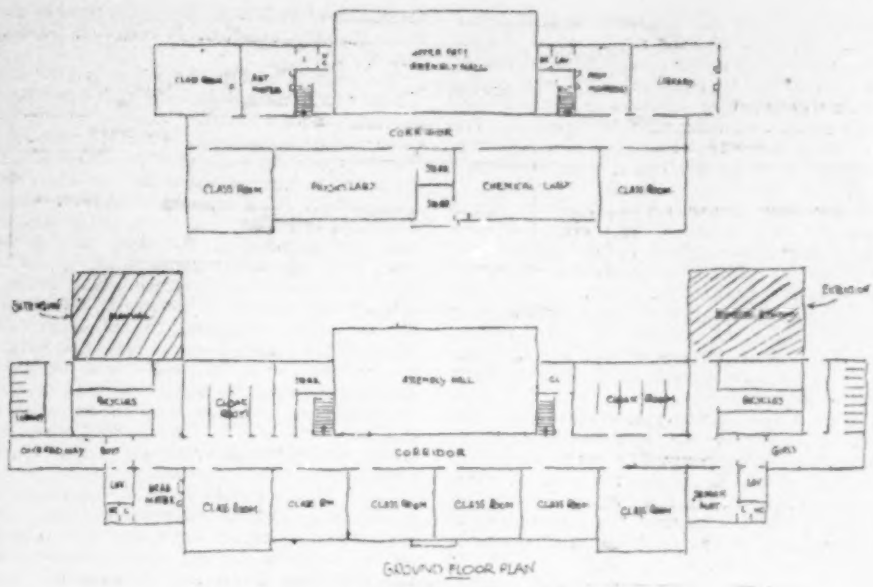
Messrs. Dickens, Lewis, & Haymes, Shrewsbury, have their cloakrooms and manual and domestic economy rooms placed in wings projecting to the north, and consequently well

isolated. Seven out of the nine classrooms are disposed on the ground floor, but the planning is marred by a badly-shaped classroom on the first floor—a most attractively-rendered elevation both in design and execution.

Mr. A. Saxon Snell, London—A simple and conveniently-arranged plan; one of the few that reduced the length of corridor by allowing the assembly hall to be traversed. The classrooms all obtain a south aspect, and the chemical laboratory and manual room were suggested as future extensions, built over portions of the ground floor. The elevations of a quite Georgian type would have given an effective and suitable building.

To sum up generally, the designs may be considered to have attained a high standard, and it seems fairly obvious that, taking all the circumstances of the case into consideration, the assessor has chosen the design that, on the whole, has given the best and most economical interpretation of the problem.

Many competitions have come to grief in their disposal of the future extensions, and a large number again, in their endeavour to avoid this failing, have supplied a great deal more accommodation than could have possibly been carried out for the specified amount.



Bath Secondary School Competition:

Second Premiated Design, by Messrs. McKewan & Madeley.

BOOKS.

Local Legislation, 1913. By F. N. KEENE (London: Messrs. Walter Southwood & Co., Ltd.).

We have received with interest from Messrs. Walter Southwood & Co., Ltd., Craven-street, Strand, Mr. F. N. Keene's collection of Private Acts of Parliament obtained by Provincial Corporations and Urban District Councils in England and Wales. The book is a continuation of the volumes of "Local Legislation" compiled and arranged by him during the years 1909 and 1911, and to members of the building trade and others in the localities named is in many respects of considerable importance. We note, amongst the larger districts recently subjected to local Acts as regards street buildings and sewers, the Corporations of Hove, Broadstairs, Southend, Leicester, Derby, Liverpool, and Southport, and others. Powers to close polluted water sources, choked-up rivers, and watercourses, to define the boundaries of same, to prevent the building of rooms without special ventilation; powers as regards the construction of walls, drains, woodwork, timber, and other matters are specially dealt with in these Acts, as well the wider subjects of finance and rating, water supply, police, public buildings, disease, food, etc. To members of the local bodies concerned this careful compilation will be extremely useful, in that it supplies a want felt amongst those interested in the management of local affairs. By showing, too, what is going on in other districts it furnishes many useful precedents as to the lines on which local development is taking place.

Laxton's Builders' Price-Book for 1914. Originally compiled by WILLIAM LAXTON. Ninety-seventh edition. (London: Kelly's Directories, Ltd., 182, 183, and 184, High Holborn.)

THE unrest in the labour market and the fluctuations in the prices of materials make the work of the compiler of a price-book very difficult, as it does the work of the estimator. In fact it is absolutely impossible to produce a work that can be of real value for a whole twelve months, or even three for that matter.

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The changes come so fast and in such unexpected directions that the reviser of an annual work such as that under notice must frequently find that before he has got to the end of his task he will find that he has to go back to the earlier items and deal with them again. We are pleased to see that there has been a serious attempt to bring our old friend "Laxton" up to date and to be able to say that it is generally with success, although we are afraid in one or two instances the reviser has been caught tripping—*e.g.*, we do not think with bricklayer at 11½d. per hour the contractor will be satisfied with 1½d. profit. As we have so often urged, a price-book can at best be only a rough guide, and as such "Laxton" can be said to keep up its reputation, which it has had for the greater part of the ninety-seven years of its existence.

After a good many attempts on our part, the compiler managed to correct the "example" on page xxviii. so as to fit in with the rates of wages. Again, the rates of wages have been revised, but the "example" remains the same. This is brought out in a somewhat amusing way in the example of adjusting a plasterer's account.

Spon's Architects' and Builders' Pocket Price-Book, 1914. Edited by CLYDE YOUNG, F.R.I.B.A., and STANFORD N. BROOKS, Licentiate R.I.B.A. Forty-first edition. (London: E. & F. W. Spon, Ltd., 57, Haymarket.)

THIS work is produced in a very convenient form, but requires a good deal of "pulling together" to make it as useful as it should be. Quite by accident we turned up page 190 and found two references—one, laying cast-iron drains, "see Drains, page 61." We look in vain on page 61 for such an item. Immediately following the last is the item, "Rain-Water Pipes, see p. 175." Page 175 gives lavatory basins, sinks, and urinals. After a time we found the item on page 192!

The prices for timber on page 156 are given as those of November, 1912, whereas we are now in the year 1914.

The prices of dayworks again have not been revised; although labour is given at 11½d., the daywork prices give only 1s. 0½d., including profit.

We hope that in future editions the revision will be more complete, as there is the making of a very useful work before us if only a due amount of care and trouble is taken in bringing it up to date.

The Insurance Act (1911) *Wages Calculator*. Compiled by JAMES S. SMITH. (London: The St. Stephen's Advertising Agency, 53, Victoria-street, Westminster, S.W. Price 2s. 6d.)

THIS useful little work is intended for builders, engineers, contractors, mechanical engineers, ironfounders, and for all trades that come within the provisions of both sections of the National Insurance Act, and it shows the result of any number of hours from one to one hundred hours (including half-hours), at rates per hour commencing at 1d. and rising by ½d. to 1s. 1d., and thence by ½d. to 1s. 3d. The work, which is clearly printed and arranged, and on the production of which much painstaking labour has evidently been given, also gives the net result after deducting the workmen's sickness and unemployment contributions.

A MINISTRY OF ART.

AT a large meeting of the General Committee which has been considering the question of the advisability of forming a Ministry of Art, held at No. 9, Conduit-street, on February 17, a scheme prepared by an Executive Committee was discussed and adopted. Among those present were Mr. Edwin Bale, R.I.; Mr. Reginald T. Blomfield, R.A., P.R.I.B.A.; Sir Thomas Brock, R.A.; Mr. W. R. Colton, A.R.A.; Mr. A. S. Cope, R.A.; Mr. E. Guy Dawber, Hon. Secretary, R.I.B.A.; Mr. Wynford Dewhurst, Sir G. Frampton, R.A.; Mr. H. V. Lanchester, F.R.I.B.A.; Mr. David Murray, R.A.; Sir Frank Short, A.R.A.; Mr. Solomon J. Solomon, R.A.; Mr. H. H. Statham, F.R.I.B.A.; Mr. W. Reynolds Stephens; Sir Aston Webb, R.A.; and Mr. H. W. Wills, F.R.I.B.A.

The scheme proposes the setting up of a Ministry of Art, and it is intended to lay it before the Government as a basis for the formation of such a Ministry, the need of some such Ministry being, it is believed, generally felt.

We understand the suggestion is that there should be a Minister at its head with a permanent Secretary and a standing Advisory Council of some eighteen members, a certain number of members retiring each year in rotation. The members should be recognised authorities in architecture, painting, and sculpture, also in industrial design and museums, and include one antiquary, dramatist, musician, and literary man, with *ex officio* representatives of the official departments concerned. The duties of this Council would be to advise the Minister on all points pertaining to his department, which would include the advising on all æsthetic matters of public interest and legislation affecting the same; it would deal with national museums and galleries, modern national art, industrial art, the laying-out and changes in cities, streets, public buildings, parks, etc., the preservation and the amenities of towns, villages, and countryside, and the acquisition and preservation of national art treasures. It is suggested that this Council should advise and should be at the disposal of all departments of the Government on any matters on which trained artistic advice is required, and it is thought that there are many subjects continuously under consideration when such advice and guidance would be welcomed. It is also intended that the Council should, through the Minister, tender advice in matters that appear to require it.

Some such organisation has been found in France and in other European countries, and in America, to have served purposes of great public utility, and, though taste in England has undoubtedly improved, it is thought that many blunders in the past might have been avoided had some such advisory body been in existence.

Mr. D. C. Bluett was elected Secretary to the Committee.

FERRO-CONCRETE AND RHEUMATISM.

BY A PANEL DOCTOR.

THERE are a great many different fungi, which are all produced by spores falling upon favourable soils in favourable positions. There are a great many different forms of rheumatism, and they also are all produced by spores or micro-organisms.

Sunlight and dryness are unfavourable to the growth of the spores either of fungi or of rheumatism, while darkness and dampness seem to be favourable to the growth of them all. Therefore it will be wise to see that all human habitations shall at least be dry and light in order that no spores of any of these plants shall be produced in the vicinity of mankind during the hours of leisure and of rest.

The human body is probably not the favourite soil for the growth of such spores, but when the vitality is at its lowest ebb, as in the night, and when the health is depressed by anxiety, sorrow, or other cause, the spores have the best chance of growing within us, especially if they are unfortunately present in any abundance. Indeed it has been said that "all conditions which seriously depress the health of body or mind are amongst the most important causes "of rheumatic affections" ("Allchin's Medicine," Vol. II., p. 225).

This explains, perhaps, the greater prevalence of rheumatic affections among the patients attending a suburban dispensary than among the less anxiously careworn patients of the panel doctor, insured as these are against many evils. But though the formation of the gun is so important to an efficient explosion, it can hardly be denied that the presence of the gunpowder is more so, and the micro-organisms described by Wohlman and others, and growing in conditions of dampness and darkness, are as probably the cause of rheumatic diseases as gunpowder is of a gun discharge.

Take three typical cases of such affections seen by the writer:—

(1) Miss G. daily attended her healthful business in the West-end from a small house without a basement. Examination showed that this house was damp, and articles placed in a cupboard in the sitting-room soon became covered with mildew. Miss G. had only become subject to rheumatism since being in this house, and although she talks of removing, she remains in the house, and is still ill.

(2) S. T., a youth, who inhabited a room in which a slate off the roof had let the rain in on the ceiling and wetted the plaster, shortly contracted rheumatic fever; the roof was mended and the plaster dried by a lamp standing on high steps. S. T. soon recovered and remains well.

(3) A schoolmistress suffered continuously from rheumatic affections and left her school. No dampness was known at home or at school. A. E. took her place, occupying the same room in the school, and began to suffer from a rheumatic affection; there was also no history of dampness at home or at school till a cupboard into which a pipe had leaked was discovered, and on this being cleaned out and dried the rheumatic symptoms disappeared both from A. E. and from another mistress who habitually occupied the same room two or three times a week and who had been similarly affected.

Cases might be multiplied without limit to show the dependence of rheumatism upon dampness in dark places.

It is significant to note that before the age of ten years girls and boys (as we are told by Dr. D. B. Lees) "are equally liable to suffer from rheumatism, but from ten to fifteen (when boys tend to be out of doors more than girls), girls are twice as liable as boys to rheumatism.

The modes of preventing the pre-existing enfeeblement of vitality which conduces to the catching of rheumatism are, of course, as manifold and as important as they are, for the most part, beyond the power of the physician to affect. Happily they are not beyond the function and capacity of a Cabinet Minister, and "so the poor hath hope." The panel doctor is now able to impress upon the workers throughout the nation the importance of keeping their homes free from spore-bearing conditions.

Travellers exposed to wet and cold in the most inclement regions of the earth have remarked upon what they called "their remarkable immunity from rheumatism," when in fact it would have been remarkable *had* they suffered from a spore-disease in the absence of spores and spore-bearing conditions, or of dark, damp, sheltered, cosy places.

Now to pass from pre-existing conditions to the actual causes of rheumatism.

To keep the homes of the people free from spore-bearing conditions is the question of the hour, and so the fight passes from diseases to their causes, for rheumatism is but a sample of one type of disease.

This is the fight which the medical profession has so long been waging and continues to wage against the myriad invisible foes of civilised man. There are other types of disease which have other causes; but with regard to this type it is a comforting thought when one realises that the health and physical well-being of the nation lie not so much in the hands of those who are (wrongly) thought merely to attempt to *cure*, as in the keeping of the architects and builders of the nation whose scientific knowledge and skilful attention to detail shall in future be directed towards the *absolute prevention* of spore-diseases or of their ever taking root among the people.

And how is this to be effected? How else than by the production of dwellings in which the conditions are inimicable to the growth of spore-bearing organisms and, therefore, favourable to the vitality of human beings.

If "the material interests of the subject races are the guiding principle of Imperial Government,"* let the material interests of our people be the guiding principle of our municipal authorities. Let the rich build of what materials they like; but let every municipality see that the workman's dwelling be impervious to wet and to cold and to vermin—almost to flood and to earthquake and to fire. In fact, it should be built of ferro-concrete. Is there a cheaper, cleaner, stronger, healthier building material known to man?

Let there be no more bricks, no more lath and plaster, and (incidentally) no more dampness. Let there be no more boards on floor or on walls with (incidentally) no more runs for vermin or darkened recesses for germs. We must part with the rat and go elsewhere for the plague—we must deprive poor pussy of even a mouse for her supper, and contaminate our food with cancer organisms from some other source if we will.

With healthier homes we shall become a healthier race and a people no longer liable to *rheumatism*.

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* "Political and Literary Essays," by the Earl of Cromer.

Since the area of the human body is limited, and the number of pains and aches to which it is liable unlimited, it would not be surprising if some of these pains were differently spoken of in different ages, and as the public is usually a generation behind the experts in nomenclature that painful affection of the structures and limbs known to "the profession" to-day as "fibrositis," and that formerly known as "passive rheumatism," is still called by the laity "rheumatics," hence the name of this article.

Sir Thomas Watson, an able author and physician of the former half of last century, very truly remarked, in speaking of this passive rheumatism, that patients so affected are most comfortable when they are warm, and his advice, as good as when it was uttered, was that they should inhabit a warm climate, or warm bed, wear warm clothing, and use warm liniments or friction until the affection had abated.

Whether a treasure be animate or inanimate it should be treated in the way most conducive to its welfare, so we are careful to provide soft boxes for our jewels, damp houses for our ferns, and dry stables for our horses. Similarly we should provide for our valuable bodies and for the bodies of our fellow citizens the houses most likely to free them from the troubles to which they may be subject.

If, therefore, warmth be essential to overcome one of the most prevalent ailments of our climate, and if ferro-concrete be a building material most likely to prove prejudicial to spore-bearing diseases, but is too rapid a conductor of heat to make comfortable dwellings for mankind, it is up to the building profession and to those familiar with the multiple requirements of the case, to erect workmen's dwellings of a non-porous solid that shall yet be not too quickly affected by atmospheric alterations of temperature, since every virtue has its failing, and the sharpest knife must be handled with the greatest care. One of the faulty virtues of ferro-concrete is that it prevents the penetration not only of damp but of air, while those porous materials to which we have hitherto trusted for the building of our homes have literally leaked at every pore. We have been accustomed to respire through wall and ceiling and floor, while the wallpapers and plaster of our rooms, if not indeed the very bricks of the walls, have proved veritable filters of germs, letting out indeed noxious gases from our apartments but retaining with certainty (in the absence of visible openings) every germ for future potency of infection.

With the use of a non-porous building material all this automatic imperfection of ventilation must be exchanged for a purposeful system of architectural efficiency; germs and gases escaping into the chimney, while the pure air of heaven must come in at every corner, through Tobin-tube entrances let into the concrete for the purpose, or conveniently fashioned in the steel supports.

As smooth, cold surfaces are not conducive to comfort for leaning against at home, all ferro-concrete walls in the house should be lined with a porous and washable dado; while parquetry flooring should replace the boards to which we have been too long accustomed.

Still greater warmth would be secured by double walls with the necessary air space between carefully secured from communicating at any point with the interior of the house; while a roughened surface to the outer wall and a padded roof would complete the essentials of sanitary dwellings conducive neither to rheumatism nor rheumatics. M.D.(Edin.).

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. Cyril Cobb, Chairman, presiding.

Tenders.—Tenders were received for the enlargement of the Burghley-road Elementary School, St. Pancras, and for the provision of hot-water heating apparatus at the County Secondary School, Brockley.

Loans.—The Finance Committee recommended that loans be made to Borough Councils as follows:—Bermondsey, £4,560 for paving works; St. Pancras, £9,248 for electricity undertaking; and Wandsworth, £9,635 for contribution towards street improvements.

Fire-Station.—The Fire Brigade Committee recommended that a new fire-station be erected on a site at the corner of Tower Bridge-road and Queen Elizabeth-street, in place of the existing one in Tooley-street. The site is estimated to cost £6,000.

Works Department.—It is was proposed by Mr. S. Holmes that the General Purposes Committee be asked to report to the Council as to the steps necessary for the reopening of the Works Department, in order to re-establish the independence of the Council against contractors, and to provide once again for the execution of work by the direct employment of labour, in order to ensure the maintenance of trade union wages, hours, and conditions in all works executed for the Council. After some discussion this proposal was, however, lost.

PARLIAMENTARY NOTES.

London Building Trade Dispute.

Several questions have been asked by Mr. Tyson Wilson and Mr. Thorne with regard to the building trade dispute. Mr. John Burns explained that applicants to Labour Exchanges for vacancies notified by London master builders have been carefully informed both of the existence of the dispute and of the conditions of employment offered. The information had been given by way of warning of the conditions to be expected, and in no way as an invitation to the workmen to comply with it. But for this proper information workmen might have had fruitless journeys to apply for jobs in ignorance of a condition which would cause them to refuse work on arrival.

Regent-street Quadrant.

Mr. Boyton asked the President of the Board of Agriculture in the Parliamentary Papers if the Committee appointed by him to consider a design for completing the rebuilding of the Regent-street Quadrant had yet approved one, when it would be issued, and where it would be exhibited.

Mr. Herbert Lewis replied that a design had not yet been settled, and consequently the issue and exhibition of it had not been considered.

British Museum New Buildings.

In Wednesday's (last week) Parliamentary Papers Mr. Bennett Goldney asked the Secretary to the Treasury whether the keepers and heads of departments were consulted as to the special requirements of the respective collections under their charge before the plans for the present additions to the British Museum were passed; whether these plans were examined and passed by the trustees or the Office of Works in consultation with the different keepers as suitable and adequate; and, if so, whether any changes in plans had had to be carried out since the building was virtually finished.

Mr. Montagu replied that there had been constant communication between the trustees, the Office of Works, the architect, and the officers concerned, both as to the general plans for the building and as to the design and arrangement of the fittings to suit the requirements of the several departments. No material alterations had been made in the plans since their approval by the trustees, but the addition of better access to one of the public galleries was contemplated.

Westminster Hall.

Answering Mr. Whitehouse as to the condition of the roof of Westminster Hall, Mr. Wedgwood Benn stated that a very considerable survey of eight trusses and six bays and a very able, exhaustive report and drawings had been prepared by Mr. Baines, one of the principal architects in the Office of Works. The First Commissioner hoped to be able to publish this report and place the drawings in the Library for members to see. It was proposed that two trusses and three bays most affected by decay should be dealt with during the next financial year. The present scaffolding, being purely for survey and examination purposes, would be removed and the repair work carried out from a movable steel supporting centre and scaffold.

London Institution.

In Tuesday's Parliamentary Papers Mr. Wedgwood Benn, in reply to Sir Godfrey Baring, stated that satisfactory progress was being made with the plans for the alterations of the building of the London Institution.

Government Buildings at Delhi.

Sir Charles Hunter asked the Under-Secretary of State for India to give the approximate cost of the new Government buildings at Delhi; and if the land on which they are situated became the property of the Indian Government before or after the announcement of the change of the capital.

Mr. Montagu replied that the projected estimates of the engineers and architects are at present being examined by the Government of India. According to these estimates the outlay on Government buildings of all kinds will amount to £2,800,000. The land has been purchased by Government under a notification which issued immediately after the announcement of the change of capital, and under terms which base the price on the value prevailing at that date.

TRADE CATALOGUES.

The Sturtevant Engineering Company, Ltd., of 147, Queen Victoria-street, E.C., have issued an attractive catalogue, entitled "The Way to Clean," describing the complete range of vacuum cleaning appliances supplied by them, from the smallest domestic cleaner, operated from an ordinary electric light connection, to the largest stationary plant for installation in public buildings. The Sturtevant turbo-cleaners are constructed on the turbine-fan principle. The catalogue is well arranged and shows at a glance the appliances which the firm supply.

Messrs. W. Cooper, Ltd., of 761, Old Kent-road, S.E., have sent us their latest catalogue describing the various articles and goods they supply. The contents include conservatories, heating apparatus, incubators, portable wood buildings, iron buildings, churches, offices, etc.

FOREIGN AND COLONIAL.

Parliament Buildings, Wellington, New Zealand.

With reference to the notice on p. 64 of the *Board of Trade Journal* of July 10 last relative to a call for tenders for the erection of Parliament Buildings in Wellington, H.M. Trade Commissioner for New Zealand (Mr. W. G. Wickham) has forwarded an extract from the local Press stating that the contract has been awarded to a Christchurch firm at a cost of £151,639. The material to be used in the walls is brick, faced with Coromandel granite up to 15 ft. from the ground, and with grey-white marble above. The portion included in the contract is 228 ft. long and 247 ft. broad, and the height of the building is to be 64 ft. The work must be finished by December 12, 1915. The name of the successful tenderer may be obtained by United Kingdom manufacturers of building material and furnishing accessories on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Harbour and Building Works, Netherlands.

H.M. Consul-General at Rotterdam (Mr. E. G. B. Maxse, C.M.G.) reports that the Municipality of Rotterdam has placed a loan in Holland of 12,000,000 gulden (£1,000,000) to be spent on construction of new harbour works on the right bank of the New Waterway at Rotterdam, building of new schools, gasworks, workhouse, and lunatic asylum, extension of electric cable and telpehone system, and extension of waterworks.

NEW SEWAGE DISPOSAL WORKS, HENDON.

Mr. R. G. Hetherington, M.Inst.C.E., one of the Engineering Inspectors of the Local Government Board, held an inquiry at the Council Offices, Hendon, N.W., on the 12th inst., into the application of the Urban District Council for sanction to borrow £28,019 for the necessary sewage disposal works to deal with the population in the low-level gravitating area south of the River Brent. The present population of the district is about 45,000, and 20,000 will be dealt with by the new scheme. Mr. S. Slater Grimley, M.Inst.C.E., the Engineer to the Council, is responsible for the scheme, and explained the proposal in detail, which includes chemical precipitation tanks and primary and secondary percolating filters, and this part of the whole scheme was rendered necessary by the rapid growth of the Golder's Green area, in consequence of the opening of the Golder's Green Station, the present terminus of the Hampstead Tube Railway. Mr. Grimley explained that another scheme of sewage disposal was in preparation for the portion of the district north of the Brent, which was being designed to take a population of over 50,000, with outfall works on the land recently acquired under the Provisional Order obtained last year. There was no opposition, and at the conclusion of the inquiry the Inspector went over the existing outfall works. Few districts in greater London have made such rapid strides as Hendon, there being from 600 to 700 good-class shops and houses erected per annum.

LAW REPORTS.

CHANCERY DIVISION.
(Before Mr. Justice WARRINGTON.)

Ancient Light Dispute: Vere v. Minter.

THIS case was heard on the 18th inst., an action brought by Canon Langton George Vere, of St. Patrick's Roman Catholic Church, Soho, for an injunction to restrain Mr. F. G. Minter, a builder and contractor, of Ferry Works, Putney, from building upon his (defendant's) land at 22, Soho-square, so as to interfere with the ancient lights of the church and the house, 21A, Soho-square, adjoining, in which the plaintiff lives.

Mr. C. J. Matthew, K.C., and Mr. Stokes appeared for the plaintiff (instructed by Messrs. Fooks, Chadwick, Arnold, & Chadwick, of 60, Carey-street); and Mr. Clausen, K.C., and Mr. Blanco White for the defendant (instructed by Mr. T. Blanco White).

Mr. Matthew explained that the action came on without pleadings on an order made on January 13, when there was a motion for injunction before the Court. The premises, Counsel continued, were originally the famous Carlisle House, and were occupied at one time by Mrs. Cornelys, and part of the ecclesiastical property was on the site of the ballroom that belonged to that lady. The present church was opened in March, 1893, superseding an older church of date 1792.

Canon Vere declared that the present building was interfering with the lights in various directions, principally in the basement and dining-room of his house, but also with the clerestory of the church and the north-end window. The light, too, of a first-floor bedroom window had been obstructed, and it was to this room, said the Canon, that he sometimes repaired for study at certain times of the year. It was cooler than other rooms, and that quality was occasionally very desirable.

Mr. R. L. Curtis, architect and surveyor, a Fellow of the Surveyors' Institution, ex-Mayor of West Ham, and a J.P. for West Ham, living at Highgate, and practising at Finsbury-square, gave evidence that the building complained of materially interfered with the light. He preferred to say nothing about the diminution of annual value to be attributed to the decrease of light.

Mr. John Robert Moore-Smith, F.R.I.B.A., also an ex-Mayor of West Ham, practising at Union-court, Old Broad-street, said he had thirty years' experience in London of such lighting troubles, and he was not averse from discussing the decline in value in the present instance. He had advised settlements in other cases, where money had been paid, and he had already privately stated here that, if there was to be compensation, it should be not less than £750, and anything between £750 and £1,000, with costs. But Canon Vere had said: "I don't want money; I want light."

Mr. Clausen: Taking the ground value at £100, and the rateable value at £84——

Mr. Moore-Smith: I would rather not suggest the diminution in annual value.

Counsel: I suggest that, if the rateable value is now £84, it would not be diminished below £64.

Mr. Moore-Smith: I would rather not speculate upon a problem of this type.

Mr. Thomas Henry Scott, Licentiate R.I.B.A., chief assistant to Mr. Curtis, generally corroborated that gentleman's evidence, and Mr. William Woodward, F.R.I.B.A., F.S.I., of 13, Southampton-street, Strand, was then called for the defence. Mr. Woodward said he was a member of the Council of the Royal Institute of British Architects, and Chairman of the Practice Committee of that Council. He had had thirty-five years' experience; he had been to this church, and he could say that nowhere in it was there "a dim religious light." It was a particularly well-lighted church, and the new building would interfere with the lighting hardly at all. "The altar," Mr. Woodward went on, "will still be perfectly fit and proper for its purpose, quite apart from the candles. Indeed, I should like to see, and many others would, a series of stained-glass windows in the church. The church would bear it very well." No doubt a diminution of light would be caused to the dining-room window—this was, he held, the chief part of the plaintiff's case—but there would still be enough light to give a comfortable occupancy.

Cross-examined, he would admit that the dining-room was indifferently lighted already.

His Lordship: And you say that, if an indifferently lighted room is more indifferently lighted, it will still be comfortable.

Mr. Matthew: What is your idea of a comfortable room?

His Lordship: If the Canon were eating a bony fish for breakfast, would he, under the shade of the new building, have less difficulty in finding the bones or not?

Mr. Matthew: Oh, he could take the fish into the window, my lord, and investigate it in the armchair. (To the witness): I do not imagine, Mr. Woodward, that you would set up as a competent judge of what is the comfortable occupancy of a chapel.

Mr. Matthew elicited from Mr. Woodward that he was thinking of an opposite wall complained of, as though it were covered with white bricks. He was not the architect of the building.

Mr. E. Keynes Purchase, F.R.I.B.A., F.S.I., of 20, Maddox-street, W., said he had been in practice as a surveyor for thirty years, and he called the threatened injury to the lighting of the church infinitesimal. Mr. Purchase had two alterations to recommend:—1. To clean the windows (of the church and a first-floor room in the house); 2 To amend the plans by setting back a wall and two roof slopes.

Mr. Clausen observed that the defendant was quite prepared so to alter his plans.

The plans by which they were building, Mr. Purchase continued, would only slightly diminish the light in the dining-room, and would not create a substantial nuisance.

Mr. Clausen offered, with the alteration of plan, to pay costs to the present moment and submit to an expert inquiry for damages. He thought the damages would now be slight.

The Canon had told of shaving without artificial light at seven in the morning, and his Lordship observed that the plaintiff's case had been as little exaggerated as any case he had ever heard.

Even so, Mr. Clausen said he did not think there was more than a couple of hundred pounds in the whole affair.

Mr. Matthew urged that this case represented an aspect of ancient lights which was often overlooked. Here was a row of windows, on several floors, of the presbytery, and, supposing those premises were to be transformed into offices, the value of the light coming through that succession of apertures must be enormous. Whatever the future of the house, light was essential, for the occupants, clergy of other generations, were anchored to the spot by the necessity of proximity to the church. Mr. Clausen's talk of diminution in annual value was trivial.

His Lordship said he found that, if the new buildings were erected, the result would be a substantial privation of light sufficient to render the occupation of the plaintiff's house uncomfortable, and prevent the Canon from enjoying it in as beneficial a manner as he had previously done. With regard to the church, he found the erection of the buildings, as proposed, would cause a substantial privation of light sufficient to render the occupation of that part of the church which was under the gallery uncomfortable, and the use of the chapel, with its altar at the west end, also uncomfortable. In both cases the plaintiff had proved there would be an actionable nuisance. Injunction naturally followed, but an offer had been made in the last stages of the hearing to alter the plans. He would make the injunction asked for, but he thought that, as the plaintiff had been very reasonable throughout, it would be possible now to carry out the changes so that they met with his approval. Plans should be discussed betwen the parties. Costs would be the plaintiff's, up to and including the judgment.

COURT OF APPEAL.
(Before the MASTER OF THE ROLLS and Lords Justices BUCKLEY and PHILLIMORE.)

Legal Status of Purchasers and their Mortgagees on Sales of Estates under Letters of Administration, Subsequently Revoked by Discovery of Mislaid Will.

Hewson and Another v. Shelley and Others.

THIS case came on for hearing on Tuesday, February 24, upon the appeal of the defendants from a judgment of Mr. Justice Astbury in the Chancery Division, the case raising an important question as to the security of title acquired by a purchaser of real property from the administrator of a deceased person's estate, the letters of administration granted being subsequently revoked and probate of an afterwards discovered will granted to the executors named therein.

The facts were these:—

Capt. George Francis Hewson, the testator, died on January 10, 1899, leaving a widow, Mrs. Emma Hewson, but no children. No will was found, and letters of administration were accordingly granted to Mrs. Hewson in June, 1899. She proceeded to pay the debts of the deceased and to distribute the estate in due course of administration, and she sold a certain freehold property known as Ovington Glebe, Southampton, which was part of the estate of the deceased, to the defendant, Sir John Shelley, for £3,500, and such property was duly conveyed to him. One-third of the purchase money was invested as dower for Mrs. Hewson, and the remainder divided among three co-heiresses of the deceased. Mrs. Hewson died in September, 1911, and her executor, in looking through her papers, discovered in an envelope at the back of an old writing-desk the will of Capt. Hewson, Mrs. Hewson's husband. The will was dated April 24, 1894, and by it the testator left his property to his widow for life, and after her death to his cousin, one of the plaintiffs. The testator directed that his cousin was "to hold Ovington Glebe as an heirloom, and on no account to sell it; but should such occur," then the proceeds were to be equally divided among certain persons named. The testator appointed the plaintiffs his executors. On February 9, 1912, the letters of administration granted to Emma Hewson were revoked, and probate of the will granted to the plaintiffs. The executors, one of whom was the Rector of Ovington, then brought the present action for the purpose of setting aside the sale of Ovington Glebe to Sir John Shelley. The defendants, Sir John and two mortgagees, to whom Sir John had mortgaged the property, after the sale, contended that the sale was *bonâ-fide*, and took place in due course of administration, and that therefore the sale could not be set aside. Mr. Justice Astbury held that a grant of administration *bonâ-fide* obtained in ignorance of a will which appointed executors was void *ab initio*, and the sale of the estate in question by the supposed administratrix was void. He accordingly entered judgment for the plaintiffs for recovery of possession of the lands in question upon the plaintiffs undertaking to hand over the dower fund in exchange for the title deeds. His Lordship also directed that there must be an account taken of the rents and profits received by defendants since the death of Mrs. Hewson, the widow, and ordered the defendants to pay the costs of the action. Hence the present appeal of the defendants.

Mr. Micklem, K.C., Mr. W. M. Hunt, and Mr. Preston appeared in support of the appeal; and Mr. Jenkins, K.C., and Mr. Arnold Herbert, K.C., for the respondents.

The case had not concluded when we went to press.

Solicitors for the appellants, Messrs. Withall & Withall; for the respondents, Messrs. Hedges & Davis.

"Carriage Forward."

AN important point on railway law came up for settlement at the Brighton County Court on the 19th inst., which is of great importance to brickmakers, builders, and others using the railways for the carriage of large quantities of building materials. It was a case in which his Honour Judge Mackarness delivered a considered judgment in a disputed action wherein the L.B. and S.C. Railway sued Mr. Alfred Petworth, brickmaker, Horsted Keynes, to recover £9 for the carriage of three lots of 3,000 bricks, during the months of April and May, from Horsted Keynes to Ruislip. The facts were not in dispute, but an important point of law was raised. Reviewing the circumstances in the course of his judgment, his Honour said the bricks were consigned on dates mentioned by the defendant at Horsted Keynes to Messrs. Lamb & Sons, at Ruislip. The consignment notes were filled in by plaintiffs' stationmaster at Horsted Keynes, except that defendant signed his name to them. There were large dealings in the course of last year between the defendant and Messrs. Lamb & Sons, entailing in all the carriage of 173,000 bricks. Those bricks were all consigned to and accepted by the plaintiffs upon terms "carriage forward," which was the recognised term to indicate that the carrier was to look to the consignee for payment of the freight. The particular consignment notes relating to the 9,000 bricks of this case were not so marked, but that was an accidental omission by the stationmaster, of which the plaintiffs did not seek to take any advantage. The bricks were duly delivered by the Metropolitan Railway Company, as agents of the plaintiffs, to certain builders, who had purchased the bricks from Messrs. Lamb & Sons, the consignees, and were so delivered upon the instructions of the latter. In the case of all the other consignments of the 173,000 bricks from the defendant to Messrs. Lamb & Sons, the latter had always been applied to for payment and had regularly paid the freight to the plaintiffs; but they had refused to pay for the 9,000 in question, the reason for which did not appear in evidence. The plaintiffs applied to them, as usual, for payment, and continued to make repeated application from May down to November or December. Moreover, they entered in their ledger the name of Messrs. Lamb & Son as their debtors. During that time they were carrying other goods or doing other business for the defendant, for which

they sent him monthly accounts, which he paid regularly. In none of those accounts was any claim made for the carriage of 9,000 bricks in April and May. In December, however, the defendant received a letter from the plaintiffs' solicitor, in which he said:—"The consignee has refused to pay, and in my opinion you are liable by virtue of the fact that you entered into the contract of carriage with my clients, and I would remind you that you signed the consignment notes." At the hearing the plaintiffs submitted that the defendant was liable not only on the ground above stated, but also by reason of a condition (No. 18) endorsed upon the consignment notes in the following terms:—"In all cases where the company's charges are not prepaid, the goods are accepted for carriage only upon the condition that the sender remains liable for the payment of the amount due to the company for the carriage of such goods, without prejudice to the company's rights, if any, against the consignee or any other person."

It was contended by the plaintiffs on the first point that the decision of Lord Chief Justice Coleridge and Mr. Justice Mathew, in the case of the Great Western Railway Company v. Bagge (1885, 15 Q.B.D. 624), was conclusive to show that the defendant was liable. It was held in that case that the defendant had made himself liable to the railway company by having, under the peculiar circumstances of that case, signed a consignment note in terms similar to the ones in issue in the present action. The Lord Chief Justice said that, "in every case it must be a matter of construction of the particular contract, and he thought there was a clear contract between the defendant and the plaintiffs to pay the carriage of the goods," and Mr. Justice Mathew said:—"It was perfectly clear that, upon the facts given in evidence before the County Court Judge, he would have been justified in drawing the inference of a contract between the sender and the carrier." But were the facts in the two cases similar? There was no evidence in the case quoted, as in the present case, of the railway company, over a long course of dealings, treating the consignees as their debtors, debiting them in their ledger, making frequent applications to them for payment, and allowing a period of eight months to elapse before applying to the consignor. There was actually evidence before the Court in that case that the defendants had made themselves liable to the consignees to pay the freight of the goods. The Court, moreover, fully recognised the binding force of the general rule laid down by the judges when advising the House of Lords in the case of the Cork Distilleries Company v. Great Western and Southern Railway Company of Ireland (L.R. 7 H.L., p. 269), that where goods were, with the consent or by the authority of the purchaser, consigned by the vendors as consignees, to be carried by the defendants as common carriers, to be delivered to the purchaser as consignee, the ordinary inference was that the contract of carriage was between the carrier and the consignee, the consignor being the agent of the consignee to make it. His Honour thought the facts in the present case justified that "ordinary inference," the more so when one considered that the plaintiffs delivered the goods by order of the consignees to their sub-purchasers. He therefore held that the contract was a contract between the plaintiffs and the consignees, and not one betwen the plaintiffs and the defendant. That conclusion, however, did not dispose of the further contention by the plaintiffs that, in any case, the defendant was liable by reason of the eighteenth condition on the back of the consignment notes signed by him. The defendant resisted that on several grounds. He said that, the contract having been made with Messrs. Lamb & Sons, the disclosed principal of the defendant, the "sender" designated in the condition as liable must be Messrs. Lamb & Sons, on the well-known principle of *qui facit per alium facit per se*. It was contended that, upon any just and rational construction of the condition, "sender" must mean someone distinct in law from the consignee, and that it would not be reasonable to construe it as imposing personal liability upon an agent after the contract had been deliberately concluded with the principal. It was further urged that the defendant's liability, if it existed at all, could only be that of a surety, and that the conduct of the plaintiffs in delaying for eight months to give notice to the defendant of the consignees' default, and in failing to exercise their lien over the goods, had prejudiced them, and thus defendant was discharged from his liability. The consignment notes bore on their face the notice that, if free delivery to the consignee was required, please write "Paid Home" in the last column, otherwise, said the notice, the goods would be held at the delivering station for payment by consignee of the delivery charges. No evidence was offered as to why plaintiffs delivered the bricks without being paid by the consignees, unless it was that the consignees had a credit account with the plaintiffs. After further discussing the facts and the law, his Honour said he had come to the conclusion that the eighteenth condition was not applicable to the defendant nor binding on him. He thought, though not without some hesitation, that the "sender" referred to in the condition must be some person other than the agent of the consignee, and he thought further, if he were wrong, and the sender was liable, that he could only be liable if the plaintiffs had given him notice at once or in a reasonable time of the consignees' failure to pay, and had exercised their lien over the goods. If the plaintiffs failed so to act, he thought they lost their right to enforce that condition against the sender. Judgment for the defendant, with costs.

Leave was given to appeal.

OBITUARY.

Mr. J. Hine.

We regret to announce the death of Mr. James Hine, aged eighty-four years, who was one of the best-known West of England architects, an original member of the Devon and Exeter Architectural Society (1890), and a co-founder of the Devonshire Association. Mr. Hine was the principal partner of the firm of Messrs. Hine & Odgers, of Plymouth, who in October, 1906, took Mr. W. H. May, of Plymouth, into partnership under the style of Messrs. Hine, Odgers, & May, practising at No. 23, Lockyer-street, as architects and surveyors. Mr. Hine was elected a Fellow of the Royal Institute of British Architects in 1864; he joined the retired list in 1907, and has latterly resided in Launceston. One of Mr. Hine's most important works is the Guildhall, Law Courts, and Municipal Offices, Plymouth, opened in March, 1872 (Messrs. Norman & Hine); in conjunction with Mr. Otho B. Peter, F.R.I.B.A., of Launceston, he made the designs for Launceston Town Hall (1887). He and his firm were the architects of the St. Budeaux Schools, North-road, and Ford Schools, for the Plymouth and the Devonport School Boards (1894-5), and the Plymouth Corporation Asylum, at Blackadon, ultimately for 400 patients, with an isolation hospital (1888-1902); in Plymouth—five blocks of workmen's dwellings at Prince Rock, for the Corporation (1900-5); Public School for 1,250 children for the Education Committee; enlargement, with improvements, of the Grammar School, North-road; other public schools; and Sutton-road School (reconstruction); in Devonport—Ker-street, Victoria-road (for 900 children), and Stoke Board Schools, for the School Board; Sunday-schools, St. Mark's, Ford; in the Three Towns—All Saints' Church, Harwell-street, in the Early English style, 1873-8 (Mr. J. Hine); St. Matthias Parish Church, Tavistock-road, 1887 (Messrs. Hine & Odgers); and the pulpit of Bath stone and local marbles, St. Andrew's Parish Church, 1871 (Mr. J. Hine); restoration by Messrs. Hine & Odgers, in 1883, of the Church of St. Stephen, the mother church of Launceston and the surrounding parishes, at a cost of £2,000; St. Thomas's Church, North Keyham, after the English Perpendicular style, for 560 sittings, having a nave, two aisles, north-western tower, large chancel, vestries, etc., begun in 1907; the new nave roof, Plympton St. Maurice, after the Devonshire "waggon" type, without horizontal ties, and enrichment with forty-five heraldical bosses and carved wall-plates; also the monument (1904) to Sir Joshua Reynolds, who was christened in the church (Mr. J. Hine); and the United Free Methodist Church at Pomphlett.

Mr. D. Henry.

Mr. David Henry, F.S.A. (Scotland), whose death was announced in our last issue (p. 233, *ante*), was the superintending architect for the erection, in 1902-3, at a cost of about £75,000, of St. Leonard's Church, in the Rathpelfie District, St. Andrews, for which Mr. Macgregor Chalmers, of Glasgow, made the plans and designs. Mr. Henry was the architect for the extension of the Ovenstone Hospital at Pittenweem for the St. Andrews District Committee, Fife County Council; Strath Kinness Public School, Strath Kinness, Fife; the Burgh School drill hall; and the police-stations at Low Valleyneid, Inverkeithing, and Kelty, for the Fife County Council.

SCHOOL, CHELSEA, S.W.

A secondary school for girls is being erected in Hortensia-road, Chelsea, accommodation being provided for about 200. The architect is Mr. W. E. Riley, F.R.I.B.A., Superintending Architect of the London County Council, and the general contractors are Messrs. Ashby & Horner, Aldgate.

PATENTS.

APPLICATIONS PUBLISHED.*

1,921 of 1913.—Carl August Teske: Joints for tubular structures.

2,535 of 1913. Albert Scott: Glazed roofs, skylights, and the like.

2,768 of 1913.—Albert Schultze: Windows.

2,957 of 1913.—Andrew George Rollo and Robert Foote Forbes Swapp: Chimney-tops or ventilators.

3,697 of 1913.—Edmund Charles Morgan Willmott and Thomas Edgar Smith: Apparatus for casting concrete walls, floors, and roofs.

3,906 of 1913.—Douglas William Oliver: Window-sashes.

6,697 of 1913.—Richmond Ettling and William Chappell: Artificial stone, concrete, and the like, and materials thereof.

6,895 of 1913.—John Cuthbert Blythe: Brick and similar kilns.

7,383 of 1913.—Jean-Marie-Gustave Vasseur: Chimney-top.

8,082 of 1913.—Fordyce Charles Jones: Device for the prevention of rattling caused by movement of window-sashes.

8,913 of 1913.—Ezra Hatton: Skylight or ventilators.

8,959 of 1913.—Edward Charles Robert Marks (Firm Veitscher-Magnesitwerke Aktien-Gesellschaft): Construction and treatment of furnace roofs and walls built of brickwork liable to shrink in heat.

9,115 of 1913.—Joseph Sinclair Fairfax: Construction of cottages.

9,612 of 1913.—George Francis Pittar, and Hayward Brothers & Eckstein, Ltd.: Cross-jointing of metal sash bars and the like.

9,647 of 1913.—Harold Joseph Tipper: Door and like bolts.

10,244 of 1913.—Henry Thomas Pople: Sash fasteners and the like.

10,510 of 1913.—Ernest William Brock: Manufacture of glass tiles for wall lining and the like.

10,587 of 1913.—Harry Jillings Glew: Emergency doors for theatres and other buildings.

10,622 of 1913.—John Irving Kirby: Barless fittings for domestic firegrates.

10,629 of 1913.—Hannah Marie Yardley: Movable range front casing or cover.

10,973 of 1913.—Max Lindner: Door lock.

13,043 of 1913.—Percy David Hedderwick: Chimney-cowl and down-draught preventer.

13,284 of 1913. Thomas Doddrell: Sliding windows.

14,468 of 1913.—Leopold Loffler: Process of manufacturing glass window ventilators.

14,596 of 1913.—François Cancalon: Reinforced building constructions.

14,627 of 1913.—George Adams: Spring portière rod for closing doors.

14,748 of 1913.—James Joseph Lawler: Automatic flushing means.

15,361 of 1913.—Heinrich Bruning: Device for regulating the flow of rainwater from roofs.

15,948 of 1913.—George William Malcolm: Securing corrugated sheeting to supports for building purposes.

17,447 of 1913.—Frederick Thackeray: Sewers, conduits, and culverts made with curved slab linings fixed together *in situ* and cased with concrete *in situ*.

17,844 of 1913.—Nelson Thomas: Grates for open fireplaces.

17,845 of 1913.—Alexander Chambley: Vault lights.

17,948 of 1913.—Peter Hesemann: Adjustable apparatuses for opening and closing fanlights and other top windows.

18,093 of 1913.—Diethelm Burkhard-Abegg: Reinforced concrete structures.

18,394 of 1913.—Henry James Williams: Device for holding doors in a closed or open position.

19,714 of 1913.—Pieter Hendrik Van Wienen: Excavators.

20,252 of 1913.—Wilhelm Brasse: Slabs for facing walls, ceilings, and the like.

20,544 of 1913.—William Russell Sweet: Locking hinges.

23,089 of 1913.—Arturo Giberti Reinforced concrete floors or ceilings, and centerings therefor.

23,960 of 1913.—Ernst Volland: Heating radiators.

25,267 of 1913.—Charles Arthur Wulf: Closet flushers.

26,382 of 1913.—Svante Wilhelm Nilsson: Supporting means for the casting of floors or the like.

27,237 of 1913.—The Samson Construction Company, Ltd., and Frederick George Andrew: Interlocking slab for use in the construction of exterior walls or interior partitions and the like.

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xxxiii.; Auction Sales, xxxviii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

MARCH 16. — **Hawarden.** — WORKMEN'S COTTAGES.—The Hawarden R.D.C. invite architects to submit plans and estimates for laying-out 21 acres of land for the erection of cottages to be let at 4s. a week. Particulars of Mr. F. Barrett, Council Offices, Broughton, Chester.

MARCH 20. — **Belfast.** — ART GALLERY AND MUSEUM.—The Belfast Corporation invite designs for above buildings. Total cost not to exceed £75,000, of which only £30,000 will be spent at once. Assessor, Mr. John J. Burnet, A.R.S.A., LL.D. See advertisement in issue of November 7.

APRIL 1.—**Sofia.**—DESIGNS FOR A ROYAL PALACE AND LAW COURTS.—Particulars from the Commercial Intelligence Branch of the Board of Trade, Bessinghall-street, E.C. See page 173, August 9, and page 350, September 27, 1912; also page 708, June 20.

APRIL 2. — **Ottawa.** — DEPARTMENTAL AND COURTS BUILDINGS. — The Department of Public Works, Ottawa, invite architects to submit sketch designs in a preliminary competition for above buildings. Six will be chosen from these for final competition. The five unsuccessful competitors will receive $3,000. The winner will be entrusted with the work. See particulars in issue for September 19 and advertisement in issue of September 12.

* MAY 1.—**Glasgow.**—SYMBOLICAL SCULPTURE.—The Glasgow Corporation invite sculptors to submit competitive models for four groups of symbolical sculpture.

MAY 4.—**London.**—ST. PAUL'S BRIDGE.—The Bridge House Estates Committee of the Corporation of London invite designs from British architects for the architectural treatment of St. Paul's Bridge. Premiums, £300, £200, and £100 respectively. The assessor is Sir William Emerson, P.P.R.I.B.A. See advertisement in issue of December 12.

MAY 15. — **Home Counties.**—LABOURERS' COTTAGES.—The proprietors of *Concrete and Constructional Engineering* invite designs for labourers' cottages. Premiums 100 guineas, 50 guineas, and 25 guineas respectively, and two at 10 guineas each. See advertisement in issue of February 20.

JUNE 20.—**Orillia.**—MONUMENT.—The Executive Committee of the Champlain Tercentenary Committee invite competitive designs for a monument to Samuel de Champlain. Not to cost more than £4,100. See advertisement in issue of February 13.

JANUARY 15, 1915.—COLLEGE MEMORIAL LECTURE HALL.—Designs for the Alexander Thompson Travelling Studentship must be delivered by the above date.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

FEBRUARY 28.—**Bradford.**—MISSION CHURCH.—Erection of mission church in Fagley-road, Bradford. Applications for quantities to Messrs. J. Harper, Baker, & Son, architects, Calverley-chambers, Victoria-square, Leeds.

MARCH 2.—**Craigdam.**—HALL.—Various trades for erection of a memorial hall to be built at Craigdam by Mr. Wm. Duthie, Collynie. Quantities from Mr. James Cobban, architect, Hado House.

MARCH 2. — **Eastbourne.**—WALLS, ETC.—Erection of boundary walls and drainage of tuberculosis hospital for the Corporation. Specifications, etc., of the Borough Architect, Bournemouth.

MARCH 2. — **Hornby.**—INSTITUTE.—Erection of institute at Hornby near Lancaster. Quantities of Messrs. Wright & Son, surveyors, 24, Castle-park, Lancaster. Architects, Messrs. Austin & Paley, Lancaster.

MARCH 2.—**Pontardawe, etc.**—ALTERATIONS.—Alterations and additions to Pontardawe and Barry Dock police courts and stations and to Canton police-station, for the Standing Joint Committee of the Glamorgan Quarter Sessions and County Council. Quantities obtained for Pontardawe and Barry Dock police courts and stations at the respective stations and at the County Hall, and for Canton police-station at the Glamorgan County Hall, Cardiff.

MARCH 2.—**Treorky.**—HALL, ETC.—Erection of a hall and institute at Treorky for the workmen of Abergorky Collieries. Quantities, etc., of Mr. Jacob Rees, architect, Pentre. Deposit, £2 2s.

MARCH 3.—**Aberystwyth.**—BUSINESS PREMISES.—Erection of premises in Northgate-street for Mr. C. Evans. Specifications, etc., of Mr. G. T. Bassett, A.R.I.B.A., Aberystwyth.

MARCH 3. — **Bedwas.** — OFFICES.—Erection of new Council offices, house, stores, and buildings at Bedwas for the U.D.C. Applications to Mr. A. S. V. Taylor, the Surveyor, Bedwas, Mon. Deposit, £2 2s.

MARCH 3. — **Kirkburton.** — HOUSES.—Various trades required in the erection of six houses at Paddock, Kirkburton, for the Kirkburton U.D.C. Quantities of Messrs. J. B. Abbey & Son, architects, District Bank-chambers, Market-street, Huddersfield.

MARCH 3. — **Sheffield.**—EXTENSIONS, ETC.—Extensions and alterations to existing sub-stations situate respectively in Jobson-road and Chapel-lane for the Corporation. Quantities of Mr. S. E. Fedden, M.Inst.C.E., General Manager and Engineer, Commercial-street, Sheffield. Deposit, 10s. 6d.

MARCH 4. — **Bangor.**—PAVILION.—Erection of golf pavilion in Bangor. Quantities of Mr. F. Bellis, High-street, Bangor. Deposit, £3 3s.

MARCH 4. — **Edinburgh.**—ADDITIONS.—Various trades in connection with the erection of additions to Tynecastle School, M'Leod-street, for the School Board. Schedules at the Board Offices, Castle-terrace, Edinburgh.

MARCH 4.—**Salford.**—ALTERATIONS.—Extensive alterations and additions required at the Salford Union Infirmary (Hope), Pendleton, for the B.G. Quantities of Mr. F. Townson, Clerk to the Guardians, Poor Law Offices, Eccles New-road, Salford. Deposit, £2 2s.

MARCH 5. — **Dewsbury.** — OPERATING THEATRE, ETC.—For various trades for erection for the B.G. of new operating theatre at the Workhouse Infirmary, and cowshed at Squirrel Hall Farm, Staincliffe, Dewsbury. Quantities of Messrs. W. Hanstock & Son, architects, Branch-road, Batley.

MARCH 5. — **Dublin.** — BOILER-HOUSE, ETC.—Provision of new propagating pits at the Royal Botanic Gardens, Glasnevin. The work may be carried out in two sections, the first of which will be the erection of propagating pit walls, boiler-house, etc. Specifications of Mr. H. Williams, Secretary, Office of Public Works, Dublin.

MARCH 6. — **Ballyduff.** — PAROCHIAL HOUSE.—Erection of a parochial house at Ballyduff, Kilmeaden, Co. Waterford, for the Very Rev. Francis Prendergast. Architects, Messrs. Moore, Keefe, & Robinsons, 1, Foster-place, Dublin. Quantities of Messrs. Morris & Kavanagh, 68, Harcourt-street, Dublin.

MARCH 6. — **Celbridge.**—ALTERATIONS.—Erection of two water-closets and for repairs and improvements in the Workhouse Building for the Celbridge B.G. Specification at Board-room, Celbridge Union Workhouse.

MARCH 6. — **Nottingham.**—BATH.—Erection of new baths, Muskham-street, Meadows, for the Corporation. Quantities from Mr. A. Dale, City Architect, Guildhall, Nottingham. Deposit, £2 2s.

MARCH 7.—**Bedford.**—PUMPING STATION.—For pumping station buildings, screening chamber, etc., for the Corporation of Bedford. Quantities of the Engineers, Messrs. Major Tulloch & Haworth, No. 28, Victoria-street, Westminster, London, S.W. Deposit, £5.

MARCH 7. — **Edinburgh.**—LAUNDRY.—For new laundry buildings and new gate lodge, Craiglockhart Poorhouse, for the Edinburgh P.C. Quantities at the office of the Architect to the Council, Mr. R. M. Cameron, 53, Great King-street, Edinburgh.

MARCH 7. — **Ely.** — WORKMEN'S DWELLINGS.—Erection of sixteen workmen's dwellings for the Ely U.D.C. Quantities of Mr. S. J. Wearing, A.R.I.B.A., 15, Upper-street, Norwich, or at the City Surveyor's Office, Silver-street, Ely. Deposit, £1 1s.

MARCH 7. — **St. Agnes.** — SCHOOL IMPROVEMENTS.—Certain improvements at St. Agnes School for the Cornwall E.C. Particulars of the Architect to the Committee, Mr. Sampson Hill, Green-lane, Redruth.

MARCH 9. — **Belfast.**—BUILDINGS.—Erection of two small buildings and the removal of an old structure at Belfast for the Great Northern Railway Company (Ireland). Specification of Mr. T. Morrison, Secretary, Amiens-street Terminus, Dublin. Deposit £1 1s.

MARCH 9. — **Poplar.** — ADDITIONS, ETC.—Construction of two new boat-sheds, stores, etc., and alterations to existing premises, at the Royal National Lifeboat Institution's storeyard, Poplar, London, E. Quantities of the Acting Engineer and Architect, Mr. A. W. Lewis, M.Inst.C.E., 15, Victoria-street, Westminster, S.W. Deposit, £1.

MARCH 9. — **Sheffield.** — SCHOOL.—Erection of Maltby-street new Council school and caretaker's house, Attercliffe Common, for the Sheffield Corporation. Quantities of the City Architect, Town Hall, Sheffield.

MARCH 10. — **Old Lakenham.** — ADDITIONS.—Repairs and additions to house at Old Lakenham (Norwich builders only). Mr. A. E. Collins, City Engineer, Guildhall, Norwich.

* MARCH 11.—**Dartford.**—EXTENSION OF WORKSHOPS.—The Metropolitan Asylums Board invite tenders for the extension of workshops.

* MARCH 11.—**London.**—REPAIR OF COTTAGES.—The Trustees of St. Martin-in-the-Fields Almshouses, etc., invite tenders for repairs to fourteen cottages.

MARCH 11. — **Oldham.**—WASHHOUSE.—Erection of a public washhouse at Robin-hill for the Corporation. Particulars of the Borough Surveyor, Town Hall, Oldham.

MARCH 13. — **Fairwood Common.**—HOSPITAL.—Erection of isolation hospital buildings on Fairwood Common, near Upper Killay, Swansea, for the Gower and Oystermouth Hospital District. Quantities of Mr. H. A. Ellis, 10, Fisher-street, Swansea, Architect to the Committee. Deposit, £1 1s.

MARCH 13.—**Rhondda.**—REPAIRS, ETC.—General repairs, painting, and decorating, etc., to be done at old hospital for the Rhondda U.D.C. Specification of the architect, Mr. W. D. Morgan, 194, Ystrad-road, Pentre. Deposit, £1 1s.

* MARCH 16.—**Coventry.**—SHOPPING.—The Gas Committee of the Coventry Corporation invite tenders for erection of single-story shopping for gasfitters' shop.

* MARCH 17.—**Stafford.**—SORTING-OFFICE.—The Commissioners of H.M. Works invite tenders for the erection of a new sorting-office.

* MARCH 20.—**Swansea.**—ASYLUM.—The Swansea and Merthyr Tydfil Asylums Committee invite tenders for foundation works for a new asylum.

MARCH 31.—**Ponteland, etc.**—POLICE-STATIONS.—Erection of a police-station at Ponteland also for a police-station at Stamfordham, for the Northumberland Standing Joint Committee. Names to Mr. J. A. Bean, County Surveyor, Moothall, Newcastle-on-Tyne, by March 3.

* MARCH 31.—**Swansea.**—MASONRY AND CONCRETE APPROACHES, ETC.—The Swansea Corporation invite tenders for construction of masonry and concrete approaches, piers, etc., for a steel girder bridge.

NO DATE. — **Liverpool.** — ADDITIONS.—Constructing dining-room, stores, etc., at the Highfield Infirmary, Knotty Ash, and also for repairs to the roadway at the Workhouse, Brownlow-hill, for the Vestry. Specifications, etc., of Mr. Gaius W. Coster, Clerk to the Select Vestry, Parish Offices, Brownlow-hill, Liverpool.

NO DATE. — **Mickleover.**—CHURCH.—Erection of Wesleyan church for the Trustees. Quantities of Mr. A. E. Lambert, architect, 28, Park-row, Nottingham.

NO DATE. — **Walkden.** — SHOP AND HOUSES.—The Walkden Co-operative Society, Ltd., invite tenders for the erection of a shop and three houses in Walkden-road, Worsley, and thirty-two houses (semi-detached) to be built in Newearth-road, Walkden. Quantities will be supplied for the former and plans and specifications for the latter. Application to be made to Mr. John T. Proffitt, architect and surveyor, Central-buildings, Memorial-road, Walkden. Deposit, £1 1s. for each set.

NO DATE. — **Warrington.** — ALTERATIONS, ETC.—The Warrington Equitable Industrial Co-operative Society, Ltd., invite tenders for alterations and additions to shop premises, Bewsey-road, Warrington, and fittings for same. Applications to the architect, Mr. F. E. L. Harris, Co-operative Wholesale Society, Ltd., 1, Balloon-street, Manchester. Deposit, £1 1s.

ENGINEERING, IRON, AND STEEL.

MARCH 2. — **Dorchester.**—LIGHTING.—Relighting of the Town Hall and Corn Exchange for the Corporation. Particulars of Mr. H. D. Strange, the Borough Engineer.

MARCH 2. — **Fraserburgh.**—GAS WORKS.—For two settings of eight retorts; ironwork in connection with alterations to retort-house roof; three new purifiers; and new chimney, for the Fraserburgh Corporation. Specifications of Mr. M. D. Campbell, Engineer and Manager, Fraserburgh.

MARCH 2.—**Leicester.**—LAMPS, ETC.—Supply of copper lamps, also for iron columns, from local firms, for the Corporation. Particulars of Mr. J. Tebb, 7, Belgrave-gate, Leicester.

[Those with an asterisk (*) are advertised in this issue.]

ENGINEERING, etc.—*continued*

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MARCH 3.—**Barrow-in-Furness.**—Installation of electric light at Blake-street School for the Corporation. Specifications of Borough Electrical Engineer, Electricity Works, Barrow-in-Furness.

MARCH 3.—**Leeds.**—TRAMWAYS.—Reconstruction of certain portions of tramway track for the Corporation. Specifications of Mr. J. B. Hamilton, General Manager, Standard-buildings, City-square, Leeds.

MARCH 4.—**Manchester.**—IRON RAILINGS.—Supplying and fixing of wrought-iron railings at the Heald-place Municipal School, Rusholme, Manchester. Specifications obtained at the Education Offices, Deansgate, Manchester Deposit, £1 1s.

MARCH 5.—**India.**—ROOFWORK.—Roofwork for locomotive engine-shed for the Great Indian Peninsula Railway Company. Specifications of Mr. R. H. Walpole, Secretary, Company's Offices, 48, Copthall-avenue, E.C., London.

MARCH 9.—**Armadale Bay.**—PIER.—Construction of steamer pier at Armadale Bay, Isle of Skye, consisting of 360 ft. of bridgeway and iron and timber, and a pier head of concrete. Specification, etc., of Mr. A. D. Macdonald, Estates Office, Armadale, and with Mr. James Fraser, C.E., Inverness. Quantities supplied by Mr. Fraser.

MARCH 10.—**Edmonton.**—ROLLED-STEEL JOISTS.—Supply and delivery of 100 tons of British rolled-steel joists, made of British steel, for the U.D.C. Particulars of Mr. Cuthbert Brown, A.M.Inst.C.E., Engineer of the Council, Town Hall, Edmonton.

MARCH 11.—**Belfast.**—COPPER WIRE.—Supply of about 36 cwt. of electric copper wire for the Belfast Harbour Commissioners. Specification from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E.

MARCH 11.—**London.**—VALVES.—The Commissioners of H.M. Works, etc., invite tenders for the supply of radiator valves during a period of three years. Particulars on application to the Storekeeper, H.M. Office of Works Stores, 12, Lambeth Palace-road, London, S.E.

MARCH 12.—**London.**—ELECTRIC BELLHANGING.—The Commissioners of H.M. Works and Public Buildings invite tenders for the execution of the electric bellhangers' work to the buildings in their charge in the London district for a period of three years from April 1, 1914. Schedules of prices of the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W. Deposit, 5s.

MARCH 17.—**Cardiff.**—HEATING.—For complete reinstallation of the heating apparatus for the whole of the buildings belonging to the Municipal Secondary School, Howard-gardens (boys' and girls' departments), for the Cardiff E.C. Mr. John J. Jackson, Director of Education, City Hall, Cardiff.

APRIL 4.—**Burnley.**—RESERVOIR.—Completion of the construction of an impounding reservoir, with catchwaters, aqueducts, meter-houses, etc., at Hurstwood, near Burnley, for the Corporation. Specification, etc., of Messrs. James Diggle & Son, engineers, Hind Hill-street, Heywood, Lancashire. Deposit, £5.

FURNITURE, PAINTING, MATERIALS, etc.

MARCH 2.—**Blackpool.**—MATERIALS.—Supply for one year to Corporation of road and paving materials, ironmongery, oils and paints, etc. Mr. John S. Brodie, Borough Surveyor, Municipal Buildings, Blackpool.

MARCH 2.—**Edinburgh.**—PAINTING.—Executing outside painter work at the City Hospital Buildings, according to specification and quantities, to be had from the architect, Mr. James A. Williamson, A.R.I.B.A., Public Works Office.

MARCH 2.—**Hull.**—MATERIALS.—Supply for one year to the Humber Conservancy Board of paints, oils, and varnishes, tools, cement, and miscellaneous stores. Forms of tender of Mr. Alfred W. Franklin, Secretary, Conservancy-buildings, Hull.

MARCH 2.—**Isleham.**—PAINTING.—Repairing, painting, etc., of the Baptist Chapel, Isleham, Cambridgeshire, for the Trustees. Specifications of the Rev. F. W. Cream, Isleham.

MARCH 2.—**Loughton.**—GRANITE KERB.—For 2,000 ft. of 4-in. by 10-in. roughly punched new Norway granite kerb. Form of tender from Mr. Horace White, the Council's Surveyor, Loughton, Essex.

MARCH 2.—**Margate.**—MATERIALS.—For year's supply to the Corporation of all kinds of (1) materials used in the Surveyor's Department, and (2) in the Waterworks Department. Forms of tender of the Borough Surveyor and the Waterworks Manager respectively, 13, Grosvenor-place, Margate.

MARCH 2.—**Preston.**—ROAD MATERIALS.—Supply to Lancashire C.C. of granite macadam, limestone macadam, rubble, chippings, gravel, etc. Forms of tender of Mr. W. Schofield, County Surveyor, County Offices, Preston.

MARCH 2.—**Preston.**—STEAM-ROLLERS.—Lancashire C.C. invite tenders for the hire of steam-rollers during the year ending March 31, 1915. Particulars of the County Surveyor, Mr. W. H. Schofield, County Offices, Preston.

MARCH 2.—**St. Marylebone.**—MATERIALS.—Supply for one year to the B.C. of road and paving materials, tools and ironmongery, timber, plumbers' materials and work, lime and bricks, etc. Particulars at the Town Hall, Marylebone-lane, Oxford-street, W.

MARCH 3.—**Esher.**—MATERIALS.—Supply for one year to the U.D.C. of Esher and the Dittons of road materials; refined tar and tarvia; lime and cement; stoneware pipes; ironmongery, tools, etc.; oils, paints, etc.; Derbyshire limestone asphalt (materials only); Norway granite kerb and Leicester granite setts and chips. Forms of tender of Mr. H. C. Fread, Surveyor, Council Offices, Portsmouth-road, Thames Ditton.

MARCH 3.—**Lewisham.**—MACADAM.—About 3,400 tons of tarred slag macadam for B.C. Forms of tender of the Surveyor, Town Hall, Catford.

MARCH 3.—**Nuneaton.**—MATERIALS.—For twelve months' supply to Corporation of bricks, kerbs, earthenware pipes, etc.; granite kerbs and setts; iron castings; iron, hardware, etc.; Portland cement. Forms of tender of Mr. F. C. Cook, Borough Surveyor, Municipal Offices, Nuneaton.

MARCH 3.—**Tottenham.**—ROAD MATERIALS.—Supply of road materials, etc., for the U.D.C. Specifications of the Clerk, Council Buildings, The Green, Tottenham. Deposit, £5.

MARCH 4.—**Birmingham.**—MATERIALS.—Supply of stores for the Corporation Gasworks in Birmingham and Swan Village, and the Wednesbury branch offices, during the year. Conditions and forms of tender at the City Gas Offices, Council House. Deposit, 5s.

MARCH 4.—**Paddington.**—TIMBER.—Supply to the Great Western Railway Company of (*a*) pitch pine logs and rock elm logs; (*b*) Baltic or Odessa hewn oak and round oak logs; (*c*) Swedish, Archangel, and St Petersburg red deal, St. Petersburg and Archangel white deal, and Quebec yellow pine deals; (*d*) mahogany board and logs, black walnut butts, and teak wheel blocks. Specifications of Mr. A. E. Bolter, Secretary, Paddington Station.

MARCH 5.—**Dundalk.**—PAINTING.—Painting and decoration of St. Patrick's Church, Dundalk, for the Very Rev. Father Lyons, according to the designs and specification of Messrs. Ashlin & Coleman, architects, 7, Dawson-street, Dublin.

* MARCH 5.—**Islington.**—TIMBER FOR FIREWOOD.—The Guardians of St. Mary, Islington, invite tenders for supply of 800 tons of timber for firewood.

MARCH 7.—**Stafford.**—MATERIALS.—One year's supply to the Staffordshire C.C. of road materials, cartage, and tools. Specifications of Mr. James Moncur, County Surveyor, County Buildings, Stafford.

MARCH 9.—**Barnes.**—MATERIALS.—Supply for one year to U.D.C. of road materials, paving materials, pipes, etc. Particulars of Mr. G. B. Tomes, Surveyor, Council House, Mortlake, S.W.

MARCH 9.—**Batley.**—MATERIALS.—Supply to the Corporation of flagstones, setts, pavors, and kerbs; sanitary tubes; cement; broken granite; broken basalt, etc., for a period of twelve months. Specification from the Borough Engineer, Mr. Oscar J. Kirby, at Town Hall, Batley.

MARCH 9.—**Colchester.**—MATERIALS.—Yearly contracts for the Corporation for materials required in Roads and Drainage Departments. Particulars of Mr. E. A. Slater, Borough Surveyor, Town Hall, Colchester.

MARCH 9.—**Derby.**—STORES.—Supply to Corporation for one year of bar iron, etc.; bricks; cement and lime; freestone, gritstone, etc.; granite, etc.; paints, oils, etc.; slag; timber, etc. Forms of tender, etc., of Mr. John Ward, M.Inst.C.E., Borough Surveyor, Babington-lane, Derby.

MARCH 9.—**Dublin.**—PAINTING.—Painting of the Amiens-street Terminus roof for the Great Northern Railway Company (Ireland). Form of tender, etc., of Mr. T. Morrison, Secretary, Amiens-street Terminus. Deposit, £1 1s.

MARCH 9.—**Edinburgh.**—MATERIALS, ETC.—Supply of all kinds of materials to the Corporation for one year, and also for various repair works. Particulars from the various heads of departments.

* MARCH 9.—**Marylebone.**—PAINTING, REPAIRS, ETC.—The St. Marylebone Guardians invite tenders for painting, repairs, etc., at the Workhouse.

MARCH 9.—**Prestwich.**—MATERIALS.—Annual contracts for the U.D.C. of road materials, pipes, paving material, etc. Forms of tender of the Surveyor, Council Offices, Prestwich.

MARCH 9.—**Smethwick.**—MATERIALS.—For supply to Corporation for one year of road materials, sanitary materials, cement, etc. Forms of tender of Mr. Alex. Hosken, Borough Engineer and Surveyor, Council House, Smethwick.

MARCH 9.—**Watford.**—MATERIALS.—Supply to the U.D.C. for one year of ironwork, ironmongery, tools, etc.; bricks, pipes, etc. Specification of Mr W. Hudson, Clerk, Council Offices, 14, High-street, Watford, Herts.

MARCH 10.—**Bath.**—PIPES.—Supply of glazed stoneware sewer pipes, gully traps, etc., during one or two years, for T.C., supplied from time to time in such quantities as may be required and delivered into Dog-lane Corporation yard in Bath. Tender forms (1s. each) of the City Surveyor.

MARCH 10.—**Cambridge.**—MATERIALS.—One year's supply to the T.C. of timber, paint, etc., stoneware pipes and fittings, Portland cement, gravel, brooms, etc. Forms of tender obtained at the office of the Borough Surveyor, Guildhall, Cambridge.

MARCH 10.—**Darlington.**—MATERIALS.—Supply for one year to the Corporation of sanitary and road materials, bricks, timber, ironmongery, paints, etc. Forms of tender of the Borough Surveyor, Town Hall, Darlington.

MARCH 10.—**Dover.**—MATERIALS.—Supply to the Dover Harbour Board during the year of timber, bricks, lime, etc., iron and steel, ironmongery, paints, etc., and other stores. Schedules (2s. 6d.) of Mr. Martyn Mowll, Register of Dover Harbour Board, Castle-street, Dover.

MARCH 10.—**Reading.**—MATERIALS.—For road and paving material, lamp standards, lanterns, and ladder irons, etc., for the Corporation. Forms of tender of Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

MARCH 10.—**Southall.**—PAINTERS' WORK, ETC.—For (1) the supply of 2,000 lin. yds. of wrought-iron fencing for borders in parks; (2) painters' work at lodges, bandstands, and fencing at parks; (3) various materials required for treatment of roads for prevention of dust. Specifications of Mr. Reginald Brown, Engineer to the Council, Town Hall, Southall.

MARCH 11.—**Hull.**—PAINTING.—Cleansing and painting of the central and branch police-stations, etc., for the Corporation. Particulars at the City Architect's Office.

* MARCH 11.—**London.**—MATERIALS, ETC.—The Corporation of London invite tenders for the supply of materials for one year.

MARCH 11.—**Oldham.**—MATERIALS.—All kinds of road and paving materials, bricks, cement, timber, tools, etc., for the Corporation for one year. Specifications of the Borough Surveyor, Town Hall, Oldham.

MARCH 14.—**Bacup.**—MATERIALS.—Annual contracts for Corporation of road material, pipes, bricks, etc. Forms of tender from the Borough Surveyor, Bacup.

NO DATE.—**Huddersfield.**—PAINTING.—Painting and cleaning the central police-station for the Corporation. Specifications of the Chief Constable, Town Hall, Huddersfield.

NO DATE.—**Salford.**—MATERIALS.—For supply of cement, granite setts, iron castings, flags, kerbs, etc., earthenware pipes, lime and limestone chippings, paints, etc., plumbing work and materials, timber. Particulars from Borough Engineer, Town Hall, Salford.

ROAD, SANITARY, AND WATER WORKS.

MARCH 2.—**Dromore.**—WELL.—Boring existing well in Rampart-street for the U.D.C. Specification of Mr. A. Fielding Wright, Town Clerk, Town Hall, Dromore.

MARCH 2.—**Tilbury.**—STREET WORKS.—Making-up of roads for the U.D.C. Mr. S. A. Hill-Willis, Engineer and Surveyor to the Council, 47, Dock-road, Tilbury. Deposit, £2 2s.

MARCH 2.—**Tonbridge.**—STREET WORKS.—Making-up of Hilden Park-road, Hildenborough, approximately 500 yds. in length, for the Tonbridge R.D.C. Quantities of Mr. Frank Harris, Engineer and Surveyor, Broadway, Southborough, Tunbridge Wells. Deposit, £2 2s.

MARCH 3.—**Dover.**—ROADS.—For tarring 25,000 yds. super. of roads in the parishes of St. Margaret's, Shepherdswell, and Ringwould, for the Dover R.D.C. Mr. F. G. Sargent, District Surveyor, Shepherdswell, Dover.

MARCH 3.—**Llandaff.**—ROADS.—For (*a*) flagging footpaths in Whitchurch-road, Gabalfa, in the parish of Llandaff; (*b*) widening Croftyguinea-road, in the parish of St. Fagans, for the Llandaff and Dinas Powis R.D.C. Quantities of the Surveyor, Mr. James Holden, A.M.Inst.C.E., Park House, 20, Park-place, Cardiff.

MARCH 3.—**North Berwick.**—WATERWORKS.—Laying and jointing about 4¼ miles of 8-in iron pipes and relative works for the Corporation. Schedule of the engineers, Messrs. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh. Deposit, £1.

MARCH 3.—**Watford.**—DRAINAGE.—Redrainage of sixteen houses situate in Westland and Franklin roads, for the Watford U.D.C. Quantities from Mr. D. Waterhouse, Engineer, Council Offices, Watford. Deposit, £1.

* MARCH 4.—**Hove.**—UNDERGROUND CONVENIENCES.—The Hove B.C. invite tenders for the erection of underground lavatories.

MARCH 5.—**Gloucester.**—PLUMBERS' WORK.—For general plumbing repairs for the Corporation for one year. Forms of tender from the City Surveyor, Guildhall, Gloucester.

MARCH 5.—**Seisdon.**—WATERWORKS.—For laying and jointing about 1,300 lin. yds. of 3-in. cast-iron pipes for the Seisdon R.D.C. Pipes supplied by Council. Quantities of Mr. W. Cannam, District Surveyor, Wombourn, near Wolverhampton.

MARCH 6.—**Gorleston.**—CONCRETE PATHS.—For making concrete paths, and other work, at the Children's Homes, Clarence-road, Gorleston, for the Board of Guardians. Specification at the Guardians' Office, 11, Queen-street, Great Yarmouth.

MARCH 6.—**Manchester.**—SANITARY.—Execution of sanitary alterations in connection with the following premises, viz.:—28, 30, 36, 38, and 40, Naylor-street; 29, Walker-street; and coal yard adjoining 30, Naylor-street, Oldham-road; 18 to 32, Wainwright-street; 48 and 50, Walker-street; and 79 and 81, North Porter-street, Oldham-road, for the Corporation. Specifications of the Manager of the Drainage Department, Town Hall, Manchester.

MARCH 7.—**South Shields.**—CONCRETE.—For providing and laying *in situ* concrete for footways and back streets in the borough, for twelve months. Specification of Mr. Leslie Roseveare, A.M.Inst.C.E., Borough Engineer and Surveyor, Municipal-buildings, South Shields.

MARCH 9.—**Baildon.**—SEWERAGE.—Construction of detritus tanks, alterations to settling tanks, percolating filters, sludge filters, etc., at sewage works of the U.D.C. Quantities of the Engineer, Mr. J. N. Nicholson, A.M.Inst.C.E., 19, Tanfield-chambers, Bradford. Deposit, £1 1s.

MARCH 9.—**Dunoon.**—RESERVOIR.—Construction of a storage reservoir on the Balgie Burn at Present Waterworks for the T.C. The length of the embankment is about 800 yds., with an average height of 17 ft. Specification, etc., of William Rodger, Burgh Engineer, Burgh-buildings, Dunoon. Deposit, £3 3s.

[Those with an asterisk (*) are advertised in this issue.]

ROADS, etc.—*continued*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MARCH 10. — **Birmingham.** — SEWERS.—For construction of surface-water sewers, Stratford-road, Hall Green, for the Corporation. Quantities of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, the Council House, Birmingham. Deposit, £2 2s.

MARCH 10.—**Lampeter.**—WATERWORKS.—Construction of a new covered reservoir, with inlet and outlet mains, fencing reservoir site, cast-iron trunk main, etc., for the Corporation. Quantities of Mr. J. E. Lloyd, Town Clerk, Lampeter. Deposit, £5.

MARCH 11. — **Dunfermline.** — WATERWORKS.—Providing, jointing, etc., about 4¼ miles of 24-in. diameter cast-iron water main in Glendevon, in the county of Perth, including valves, hydrants, surface boxes, scours, etc. Quantities of Messrs. Warren & Stuart, civil engineers, 94, Hope-street, Glasgow. Deposit, £2 2s.

MARCH 11.—**Loftus.**—SEWERAGE.—Diversion and relaying of the main sewer in Kilton Beck, comprising 230 yds. of 15-in. cast-iron pipes, 245 yds. of 12-in. cast-iron pipes, carried on concrete piers, and 30 yds. of 15-in. stoneware pipes in cutting, five new manholes and alterations to five existing manholes, and other attendant works, for the U.D.C. Quantities of Mr. B. J. Wormleighton, P.A.S.I., Engineer and Surveyor to the Council, Town Hall, Loftus, Yorks. Deposit, £1 1s.

MARCH 11.—**Stoke-on-Trent.**—STREET WORKS.—Making-up of the following streets:—Back Dundee-road South, Hanley; Back Ladysmith-road South, Hanley; Back Kimberley-road South, Hanley; Back Wellington-road South, Burslem; Stoneley-street, Burslem. Quantities from the Borough Surveyor. Deposit, £1 1s.

MARCH 14.—**Chesham.**—SEWERS.—Reconstruction, with cast-iron pipes, of about 712 lin. yds. of 12-in., 977 lin. yds. of 9-in., and 935 lin. yds. of 6-in. existing stoneware pipe sewers and house connections, etc., for the U.D.C. Specification of Mr. Percy C. Dormer, Engineer and Surveyor, Council Offices, Chesham.

APRIL 11. — **Keighley.** — WATERWORKS.—Construction of a storage reservoir, with an earthen embankment, valve tower, outlet culvert, waste weir, waste watercourse, flood watercourse, and residuum lodge and gauge basin; also of a series of four filter-beds, clear-water basin, straining well, and venturi meter and recording-house, etc., for the Keighley Corporation. Quantities, etc., of the Engineer, Mr. M. Ratcliffe Barnett, M.Inst.C.E., either at the Town Hall, Keighley, or at the Sladen Valley Waterworks, near Haworth. Deposit, £10 10s.

Public Appointments.

✱ MARCH 5.—SUPERINTENDENT OF REPAIRS.—The South Shields Education Authority invite applications for the above post. Salary, £2 5s. per week.

✱ MARCH 7. — HANDICRAFT INSTRUCTOR. — The L.C.C. invite applications for above post. Salary, £100.

✱ MARCH 7.—ASSISTANT QUANTITY SURVEYOR.—Applications are invited for the above post. Salary, £104 per annum.

✱ MARCH 14.—CLERK OF WORKS.—The Beckenham E.C. invite applications for the above post. Salary, £3 3s. per week.

✱ MARCH 17.—MANAGER OF REFUSE DESTRUCTOR.—The Kensington B.C. invite applications for the above post. Salary, £160 per annum.

✱ NO DATE.—ASSISTANT QUANTITY SURVEYOR.—The Sheffield Corporation invite applications for the above post.

Auction Sale.

✱ MARCH 4.—**Denmark Hill.**—Messrs. Hooker & Will will sell by auction, on the premises, a quantity of building materials.

[Those with an asterisk (✱) are advertised in this issue.]

NOTICES.

Tel., 6113 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME CV. (July to December, 1913) was given as a supplement with the issue for January 9.

CLOTH CASES for Binding the Numbers can be obtained, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE HUNDRED AND FIFTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, is now ready.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines (or under) ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 1d.
Each additional line (about ten words) ..... 0s. 1d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must* not be sent; but all sums should be remitted by Postal Orders, payable to THE BUILDER LTD., to the office, 4, Catherine Street, Aldwych, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publishers cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommend that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office*, 4, Catharine Street, Aldwych, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES NINEPENCE EACH. By post (carefully packed), 1s.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER LTD., and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£	s.	d.
Best Stocks	1	16	6
Picked Stocks for Facings	2	10	0

Per 1000, Delivered at Railway Depôt.	£	s.	d.
Flettons	1	14	0
Best Fareham Red	3	12	0
Best Red Pressed Ruabon Facing	5	0	0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	12	7	6
Headers	11	17	6
Quoins, Bullnose and 4½ in. Flats	15	17	6
D'ble Str'tch'rs	17	17	6
Best Blue Pressed Staffordshire	3	15	0
Do. Bullnose	4	0	0
Best Stourbridge Fire Bricks	4	0	0
Double Headers	14	17	6
One Side and two Ends	18	17	6
Two Sides and one End	19	17	6
Splays and Squints	17	7	6

Second Quality £1 10s. per 1000 less than best.

	s.	d.	
Thames and Pit Sand	7	0	per yard, delivered.
Thames Ballast	5	9	" "
Best Portland Cement	37	0	per ton, "
Best Ground Blue Lias Lime	20	0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 14s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

Per Ft. Cube.	s.	d.
BATH STONE—delivered on road waggons, Paddington Depôt	1	7½
Do. do. delivered on road waggons, Nine Elms Depôt	1	9½
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	4½
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	6½

Per Ft. Cube, delivered at Railway Depôt.	s.	d.
Ancaster in blocks	1	10
Beer in blocks	1	6
Greenshill in blocks	1	10
Darley Dale in blocks	2	4
Red Corsehill in blocks	2	3
Closeburn Red Freestone	2	0
Red Mansfield Freestone	2	4
Talacre & Gwespyr Stone	2	4

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.		
Scappled random blocks	2	10

Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto, ditto	2	6
3 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.		
Scappled random blocks	3	0

Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
3 in. sawn two sides slabs (random sizes)	1	2
2 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20 × 10 best blue Bangor	13	2	6	20 × 10 best Eureka unfading green	15	17	6
20 × 12 ditto	13	17	6	20 × 12 ditto	18	7	6
20 × 10 1st q'lity ditto	13	0	0	18 × 10 ditto	13	5	0
20 × 12 ditto	13	15	0	16 × 8 ditto	10	5	0
16 × 8 ditto	7	5	0	20 × 10 permanent green	11	12	6
22 × 10 best blue Portmadoc	12	12	6	18 × 10 ditto	9	12	6
16 × 8 ditto	6	12	6	16 × 8 ditto	6	12	6

TILES.

At Railway Depôt.

	£	s.	d.		£	s.	d.
Best plain red roofing (per 1000)	42	0		Best "Hartshill" brand, plain sand-faced (per 1000)	45	0	
Hip and Valley (per doz.)	3	7		Do. pressed (per 1000)	42	6	
Best Broseley (per 1000)	50	0		Do. Ornamental (per 1000)	47	6	
Do. Ornamental (per 1000)	52	6		Hip (per doz.)	4	0	
Hip and Valley (per doz.)	4	0		Valley (per doz)	3	6	
Best Ruabon red, brown, or brindle (Edw'ds) (pr1000)	57	6		Staffords. (Hanley) Reds or Brindled (per 1000)	42	6	
Do. Ornamental (per 1000)	60	0		Hand-made sand-faced (per1000)	45	0	
Hip (per doz.)	4	0		Hip (per doz.)	4	0	
Valley (perdoz.)	3	0		Valley (per doz)	3	6	

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15	0	0	16	10	0
Deals: best 3 in. by 9 in.	15	0	0	16	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	12	10	0	13	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.			
Deals: seconds	1	0	0	less than best			
Battens: seconds	0	10	0	" "			
2 in. by 4 in. and 2 in. by 6 in.	11	10	0	12	10	0	
2 in. by 4½ in. and 2 in. by 5 in.	10	10	0	11	10	0	
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.			
¾ in.	1	0	0	"			
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5	0	0	6	5	0	
Seconds	4	10	0	5	0	0	
Small timber (8 in. to 10 in.)	3	17	6	4	0	0	
Small timber (6 in. to 8 in.)	3	5	0	3	10	0	
Swedish balks	2	12	6	3	0	0	
Pitch-pine timber (30 ft. average)	6	0	0	7	0	0	

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	26	0	0	27	0	0
3 in. by 9 in.	24	0	0	25	0	0
Battens, 2½ in. and 3 in. by 7 in.	18	10	0	19	10	0
Second yellow deals, 3 in. by 11 in.	21	10	0	22	10	0
Do. 3 in. by 9 in.	20	0	0	21	0	0
Battens, 2½ in. and 3 in. by 7 in.	15	0	0	16	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	16	0	0	17	0	0
Battens, 2½ in. and 3 in. by 7 in.	14	0	0	15	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	23	0	0	24	0	0
Do. 3 in. by 9 in.	20	0	0	21	0	0
Battens	15	0	0	16	0	0
Second yellow deals, 3 in. by 11 in.	17	10	0	18	10	0
Do. 3 in. by 9 in.	16	0	0	17	0	0
Battens	12	10	0	13	10	0
Third yellow deals, 3 in. by 11 in.	14	0	0	15	0	0
Do. 3 in. by 9 in.	13	10	0	14	10	0
Battens	11	10	0	12	10	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	16	10	0	17	10	0
First white deals, 3 in. by 9 in.	14	10	0	15	10	0
Battens	13	0	0	13	10	0
Second white deals, 3 in. by 11 in.	14	10	0	15	10	0
Second white deals, 3 in. by 9 in.	13	0	0	14	0	0
Battens	12	0	0	12	10	0
Pitch-pine: deals	25	0	0	26	10	0
Under 2 in. thick extra	0	10	0	1	0	0
Columbian or Oregon Pine, best quality	23	10	0	26	0	0
Yellow Pine — First, regular sizes	50	0	0	upwards.		
Oddments	35	0	0	"		
Seconds, regular sizes	36	0	0	"		
Oddments	31	0	0	"		

WOOD (*Continued*).

Joiners' Wood (*Continued*)—	£	s.	d.		£	s.	d.
Kauri Pine—Planks per ft. cube	0	5	6	..	0	6	6
Dantzic and Stettin Oak Logs—							
Large, per ft. cube	0	3	0	..	0	3	9
Small " "	0	2	6	..	0	3	0
Wainscot Oak Logs, per ft. cube	0	7	6	..	0	9	0
Dry Wainscot Oak, per ft. super, as inch	0	0	10	..	0	1	2
½ in. do. do.	0	0	9	..	0	1	0
Dry Mahogany — Honduras, Tabasco, per ft. super, as inch	0	0	10	..	0	1	3
Selected, Figury, per ft. super. as inch	0	1	6	..	0	2	6
Cuba Mahogany	0	1	4	..	0	2	6
					upwards.		
Dry Walnut, American, per ft. super, as inch	0	0	10	..	0	1	2
French "Italian" Walnut	0	0	10	..	0	1	4
Teak per load (Rangoon or Moulmein)	20	10	0	..	26	0	0
Do., do. (Java)	19	0	0	..	22	10	0
American Whitewood planks, per ft. cube	0	5	6	..	0	6	6
Prepared Flooring, etc.—			Per square.				
1 in. by 7 in. yellow, planed and shot	0	14	6	..	0	18	0
1 in. by 7 in. yellow, planed and matched	0	14	9	..	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	17	6	..	1	3	0
1 in. by 7 in. white, planed and shot	0	14	0	..	0	16	0
1 in. by 7 in. white, planed and matched	0	14	3	..	0	16	6
1¼ in. by 7 in. white, planed and matched	0	16	6	..	0	8	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0	12	6	..	0	15	0
1 in. by 7 in. " "	0	15	0	..	0	18	6
¾ in. by 7 in. white " "	0	12	0	..	0	14	0
1 in. by 7 in. " "	0	14	6	..	0	16	6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London or delivered Railway Vans, per ton.						
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	9	0	0	..	10	0	0
Compound Girders, ordinary sections	11	0	0	..	12	0	0
Steel Compound Stanchions	12	0	0	..	13	0	0
Angles, Tees, and Channels, ordinary sections	11	0	0	..	12	0	0
Flitch Plates	11	0	0	..	12	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	8	10	0	..	9	0	0

METALS.

	Per ton, in London.						
	£	s.	d.		£	s.	d.
Iron—							
Common Bars	9	0	0	..	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	..	9	15	0
Staffordshire "Marked Bars"	11	0	0	..	—		
Mild Steel Bars	9	5	0	..	9	15	0
Hoop Iron, basis price	10	0	0	..	—		
" " Galvanised	17	10	0	..	—		

* And upwards, according to size and gauge.

Sheet Iron Black—							
Ordinary sizes to 20 g.	10	5	0	..	—		
" " 24 g.	11	5	0	..	—		
" " 26 g.	12	15	0	..	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	..	—		
Ordinary sizes to 22 g. and 24 g.	16	0	0	..	—		
Ordinary sizes to 26 g.	17	0	0	..	—		
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	10	0	..	—		
" " 22 g. and 24 g.	19	0	0	..	—		
Ordinary sizes to 26 g.	20	10	0	..	—		
Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 8 ft. 20 g.	15	0	0	..	—		
Ordinary sizes, 22 g. and 24 g.	15	5	0	..	—		
Ordinary sizes, 26 g.	16	15	0	..	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	..	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	10	0	..	—		
Best Soft Steel Sheets, 26 g.	15	10	0	..	—		
Cut Nails, 3 in. to 6 in.	11	0	0	..	11	10	0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Delivered in London.						
	£	s.	d.		£	s.	d.
Lead—Sheet, English, 4 lb. and up	22	15	0	..	—		
Pipe in coils	22	10	0	..	—		
Soil pipe	25	10	0	..	—		
Compo pipe	25	10	0	..	—		
Zinc—Sheet—	In casks of 10 cwt.						
Vieille Montagne	28	5	0	..	—		
Silesian	28	10	0	..	—		
Zinc, in bundles, 1s. per cwt. extra.							
Copper—							
Strong Sheet per lb.	0	1	1	..	—		
Thin "	0	1	2	..	—		
Copper nails "	0	1	0	..	—		
Copper wire "	0	1	0	..	—		
Brass—							
Strong Sheet "	0	1	0	..	—		
Thin "	0	1	1	..	—		
Tin—English Ingots "	0	1	10	..			
Solder—Plumbers' "	0	0	10	..	—		
Tinmen's "	0	1	1	..	—		
Blowpipe "	0	1	3	..	—		

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

15 oz. thirds	2½d.	26 oz. fourths	3½d.
" fourths	2d.	32 oz. thirds	5½d.
21 oz. thirds	3½d.	" fourths	4½d.
" fourths	3d.	Fluted Sheet, 15 oz.	3d.
26 oz. thirds	4½d.	" 21 oz.	4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

¼ Rolled plate	2½d.
⅜ Rough rolled and rough cast plate	2½d.
½ Rough rolled and rough cast plate	3d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
Ditto, tinted	5d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	2
" " " in barrels	"	0	2	3
" " " in drums	"	0	2	5
Boiled " " in barrels	"	0	2	5
" " " in drums	"	0	2	8
Turpentine in barrels	"	0	2	9
" in drums	"	0	2	11
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		29	15	0
Red Lead, Dry	per ton	28	0	0
Best Linseed Oil Putty	per cwt.	0	9	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon.		
	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	6
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	6
French and Brush Polish	0	10	0

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 6 p.m. on Wednesday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

*** Denotes *accepted*. † Denotes *provisionally accepted*.**

BASINGSTOKE. — For Basingstoke Drill Hall. Messrs. Charles J. Hair & J. C. Bucknill, B.A., architects and surveyors, 23, Portland-chambers, Southampton :—

S. Roberts, Ltd.	£2,498	Jukes & Sons	£2,264
Day	2,404	Tigwell	2,230
Smallbone & Sons	2,349	Pittard & Sons	2,229
Jenkins & Sons, Ltd.	2,269	Goodall	2,212
T. Draper	2,268	Blunden & Oliver	2,190

BEXHILL.—For extension of sewer along Barnthorn-lane, for the Bexhill Corporation :—

S. Carey* £675

BRISTOL.—Erection of boathouse at Eastville-park, for the Bristol Corporation :—

G. R. Speaker & Co.* £221 9 4

BURNHAM-ON-CROUCH. — For laying of water-mains in Church-road, etc., for the Urban District Council :—

W. H. French, Buckhurst Hill* £661 5 6

[The contractor previously accepted had withdrawn.]

CHARTHAM.—For erection of two new blocks at Chartham Asylum, for the Kent County Council :—

R. Elliott & Co., Margate* £31,641

CHEADLE.—For private street works in Hill Top-avenue and Holne Hall-avenue, for the Cheadle Urban District Council :—

Bethell & Son, Sale* £1,909 12 4

COLCHESTER.—For alterations at 28, High-street, Colchester, for Messrs Wright Bros. Mr. Duncan W. Clark, A.R.I.B.A., P.A.S.I., architect and surveyor, 3, High-street, Colchester. Quantities by architect :—

Dobson & Son	£1,887	W. Chambers	£1,748
R. Beaumont	1,795	Everett & Son*	1,694
T. J. Ward	1,792		

DRIFFYDAM.—For Council school (accommodation, 270, with handicraft centre attached), for the Leicestershire County Council Education Committee. Mr. E. G. Fowler, Architect, County Education Office, Leicester :—

T. Barker & Sons	£2,950 0 0	W. Moss & Sons, Ltd.	£2,790 0 0
Chitham & Co.	2,899 0 0	W. Moss & Son	2,749 10 0
Griffin Bros.	2,883 10 0	F. Sleath	2,743 0 0
Orton & Co.	2,840 0 0	W. Maule & Co.	2,720 0 0
J. C. Kellett & Son	2,820 0 0	E. Fox, Leicester*	2,694 0 0
J. Cole & Sons	2,812 1 6		
Haycock Bros.	2,797 15 0		

DOWNPATRICK.—For erection of a gamekeeper's house, for Lord Dunleath. Mr. E. L. Woods, architect, 97, Main-street, Bangor :—

H. L. Chambers, Downpatrick* £420

ELLISTOWN.—For Council school (accommodation, 240), for the Leicestershire County Council Education Committee. Mr. E. G. Fowler, Architect, County Education Office, Leicester :—

J. C. Kellett & Son	£2,070 0 0	Griffin Bros.	£1,950 0 0
T. Elvins & Sons	2,070 0 0	W. Moss & Son	1,935 0 0
W. Maule & Co.	2,030 0 0	Haycock Bros.	1,922 19 0
T. Barker & Sons	2,020 0 0	Orton & Co.	1,912 0 0
Chitham & Co.	1,997 0 0	F. Sleath, Rothley*	1,895 0 0
J. Cole & Sons	1,975 6 8	W. Moss & Sons, Ltd.	1,890 0 0
E. Fox	1,959 0 0		

HACKBRIDGE.—For erection of a ferro-concrete bridge over the Wandle, for the Croydon Rural District Council :—

Holloway Bros., Ltd.* £1,282

HINCKLEY.—For handicraft centre, for the Leicestershire County Council Education Committee. Mr. E. G. Fowler, Architect, County Education Office, Leicester :—

A. Jeffcote	£772 18 0	J.C. Kellett & Son	£645 0 0
W. M. Sharpe & Son, Ltd.	690 0 0	J. Hall & Son	630 16 0
W. Moss & Son	680 0 0	E. Fox	620 10 0
T Barker & Sons	679 0 0	J. Cole & Sons, Leicester*	600 15 8
Haycock Bros.	662 15 0		

LEICESTER.—For the erection of a Picture House in Belgrave-gate, Leicester, for the Star Picture House Co. Mr. T. Henry Bowell, M.S.A., architect, 4, Market-place, Leicester :—

Southam & Sons	£2,920 0	Chitham & Co.	£2,580 0
Bradshaw Bros.	2,826 4	G. A. Phipps	2,544 0
W. Potter	2,620 0	Cox & Co.	2,530 0
Clarke & Garrett	2,593 0	Cole & Sons, Bridge-road, Leicester*	2,515 8
Kellett	2,588 0		

LEWISHAM.—For kerbing, channelling, and making up the roadway and paving the footways of part of Bellingham-road with artificial stone Mr. E. van Putten, Borough Surveyor, Town Hall, Catford :—

—	Roadway.	Footways at per yd. super.
		s. d.
General Stone and Marble Co., Ltd.	—	5 6
Atlas Stone Co., Ltd.	—	4 3
Thames Stone Co., Ltd.	—	4 2
Alexandra Paving Co., Ltd.	—	3 11½
J. T. Gloag	1,769 0 0	—
H. Woodham & Sons	1,760 0 0	—
J. Mowlem & Co., Ltd.	1,724 0 0	—
W. Pearce	1,679 0 0	3 10½*
Fry Bros., Ltd.	1,665 0 0*	—

LONDON.—Rebuilding of Clerkenwell Fire Station, for the London County Council :—

A. Monk	£18,135 0 0	Higgs & Hill, Ltd.	17,924 0 0
F. & H. F. Higgs	17,325 0 0	J. Smith & Sons	17,140 0 0
Leslie & Co., Ltd.	17,113 0 0	J. Carmichael	16,971 0 0
W. H. Lorden & Son, Ltd.	16,892 0 0	Patman & Fotheringham, Ltd.	16,843 0 0
G. Godson & Sons	16,798 0 0	J. & C. Bowyer, Ltd.	16,770 0 0
W. Downs	16,470 0 0	F. J. Coxhead	16,373 16 4

[Fresh tenders are to be invited.]

LONDON.—Improvement of sanitary arrangements at Plassy-road School, for the London County Council :—

F. Smith & Co.	£698 10	A. Coldman & Son	£447 13
E. A. Boome & Co.	655 0	F. W. Lossby	439 0
H. H. Hollingsworth	625 0	W. Beattie	425 0
W. Bailey	605 0	W. Pollock	398 0
H. Groves	588 0	H. Line, 81, Peckham-rye*	350 0
Thomas & Edge	519 0		
W. Mills & Sons, Ltd.	513 0		

LONDON.—For alterations to the police-station at Paddington. Mr. J. Dixon Butler, F.R.I.B.A., architect, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C. :—

Ashby & Horner	£14,914	Roome & Co.	£13,701
Prestige & Co.	14,693	C. Wall, Ltd.	13,691
Godson & Sons	14,484	Holliday & Greenwood	13,644
Perry & Co.	14,234	J. Garlick, Ltd.	13,533
F. & H. Higgs	14,120	Willmott & Sons	13,477
F. G. Minter	14,075	J. W. Dickens	13,438
W. Taylor	13,926	Patman & Fotheringham	13,388
McCormick & Sons	13,892	Adamson & Sons	13,265
Dove Bros.	13,788		
Sabey & Sons	13,755		
Sheffield Bros.	13,724		

LONDON.—Erection of receiving-room at Grove Hospital, for the Metropolitan Asylums Board :—

G. Bland	£600	Chappell Bros.	£265
T. W. Heath & Son	365	E. Peddle	250
E. Mills	335	E. Wall	258
W. Reason	315	Howard & Brake, 145, High Holborn, W.C.*	240
W. S. Sharpin	278		
Pasterfield & English	267		

LONDON.—For enlargement of Broadwater-road School, Wandsworth, for the London County Council :—

F. W. Fletcher	£1,138 0 0	H. & E. Lea	1,111 0 0
A. Leather	1,103 19 0	W. Akers & Co., Ltd.	1,065 0 0
Lole & Co.	1,063 10 8	Triggs & Co.	1,050 0 0
Pasterfield & English	1,023 0 0	J. & C. Bowyer, Ltd.	1,015 0 0
J. Marsland & Sons	1,009 0 0	F. & G. Foster	975 0 0
H. H. Hollingsworth, Batten's-yard, High-street, Peckham*	936 0 0		

LONG BENTON.—For permanent isolation pavilion at Scaffold Hill, for Earsdon Joint Hospital Board. Mr. J. R. MacMillen, Architect, Council Offices, Shiremoor. Quantities by Architect:—

W. Swan	£2,774 11 0	H. Millar	£1,787 0 0
A. & J. Potts	1,977 16 0	A. L. Hastings	1,775 19 6
J. P. Bertram & Sons	1,887 17 6	R. & A. Tait, Seaton Delaval*	1,723 3 6
R. Taylor	1,844 6 1		

[Architect's estimate, £1,800.]

MULLINGAR.—For construction of sewerage scheme, for the Mullingar Rural District Council:—
Grainger Bros., Belfast* £13,555 4 2

NORTH WALSHAM (Norfolk).—For alterations to premises, for the London and Provincial Bank, Ltd. Messrs. Morgan & Buckingham, F.S.I., A.R.I.B.A., architects and surveyors, Norwich:—

T. H. Yelf	£1,333	Cornish & Gaymer	£1,247
J. S. Smith & Son	1,330	T. Gill & Son	1,187
J. Hurn & Son	1,295	W. J. Hannant, Norwich*	1,175
J. Youngs & Son	1,279		

REDHILLS.—For erection of a creamery at Redhills, Co. Cavan, for the Co-operative Society. Mr. P. J. Brady, C.E., architect, Ballyhaire:—
W. McKerman, Clones* £180

SHOREHAM.—For the erection of Council school, for the West Sussex Education Committee:—
W. Willett, Shoreham* £3,836

SOUTHEND-ON-SEA.—For construction of jetty adjoining the Chalkwell Esplanade, for the Town Council:—
T. W. Pedretto, Enfield* £462 19 4

SOUTHEND-ON-SEA.—For the execution of street works, for the Corporation:—
Davey & Armitage*; Bryant-avenue, £452; back passage, Ditton Court-road, £65 10s. W. Rea*; Chalkwell Park-drive, section 1, £1,870; King's-road, £1,605. W. Buxton*: Surbiton-road, section 2, £566 4s. 7d.; Westcliffe Park-drive, section 2, £1,699 17s. 9d.

SOUTHEND-ON-SEA.—For laying bituminous road-surfacing material in Cliff Town-parade, for the Corporation:—
Highways Construction Co., Ltd.,* 3s. 8d. per yard.

SPALDING.—For erection of six houses at Gosberton, for the Spalding Rural District Council:—
Vamplew Bros., Friskney,* £719 for two pairs at Westhorpe; £726 for two pairs on the main road; and £1,080, with £70 extra for fencing and gates, at Cape's Entry.

SWANSEA.—For erection of a temporary school to accommodate 495 scholars. Mr. E. E. Morgan, Borough Architect:—

Humphreys, Ltd.	£3,730 0 0
E. Rich & Sons	3,445 18 2
J. Harrison & Co.	3,415 2 1
T. Richards	3,100 0 0
J. McManus	3,091 0 0
J. & F. Weaver	2,925 0 0
Havard & Jones	2,900 0 0
T. W. Palmer & Co.	2,858 0 0
Bennett Bros.	2,775 0 0
T. Spragg	2,760 0 0
H. W. Nicholls	2,618 13 6
D. Jenkins, Ltd.	2,600 0 0
G. Davies, Paxton-yard, Swansea*	2,554 9 8

TULLYVIN (Cootehill).—For erection of a creamery, for the Co-operative Society. Mr. P. J. Brady, C.E., architect, Ballyhaire:—
T. Brady, Cootehill* £222 10

WESTHAMPNETT.—For construction of Felpham sewage scheme, for the Westhampnett Rural District Council:—
F. Osman & Co., Southampton* £3,299

WARMINSTER.—For erection of an isolation hospital in the Bradley-road. Mr. A. Lawton, architect, Warminster:—

Linzey	£2,973	Parsons Bros., Westbury, Wilts.*	£2,87
Dyer & Sons	2,945		
R. Butcher & Son	2,913		

[Architect's estimate, £2,946.]

WILLESDEN.—For making-up Waxlow-road. Mr. O. Claude Robson, Borough Surveyor, Urban District Council Offices, Willesden:—

T. Adams	£2,991 13	F. G. Brummell*	£2,849
J. Latter	2,957 0		

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